

Power Supplies

FAK Series

AC Input

Single Output, General-Purpose

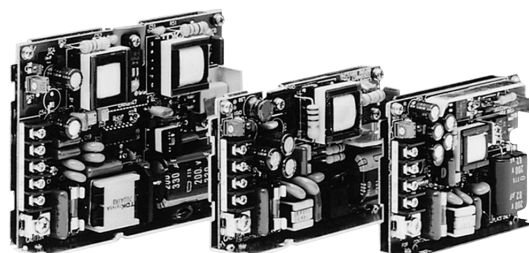
FEATURES

- Rail mountable. Small open frame(cover is optional).
- Low cost.
- These low noise power supplies are FCC class B compliant.

PART NUMBERS AND RATINGS

Output voltage (V)	15W type		25W type		50W type	
	Current (A)	Part No.	Current (A)	Part No.	Current (A)	Part No.
5	3	FAK05-3R0	5	FAK05-5R0	10	FAK05-10R
12	1.3	FAK12-1R3	2.1	FAK12-2R1	4.2	FAK12-4R2
15	1	FAK15-1R0	1.7	FAK15-1R7	3.4	FAK15-3R4
24	0.7	FAK24-0R7	1.1	FAK24-1R1	2.1	FAK24-2R1

Output voltage (V)	100W type		150W type	
	Current (A)	Part No.	Current (A)	Part No.
5	20	FAK05-20R	30	FAK05-30R
12	8.3	FAK12-8R3	12	FAK12-12R
15	6.6	FAK15-6R6	10	FAK15-10R
24	4.2	FAK24-4R2	6	FAK24-6R0
48	2	FAK48-2R0	3	FAK48-3R0



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SPECIFICATIONS

15W TYPE

Part No.		FAK05-3R0*1	FAK12-1R3	FAK15-1R0	FAK24-0R7
Output voltage, current*2		5V • 3A	12V • 1.3A	15V • 1A	24V • 0.7A
Maximum output power	W	15	15.6	15	16.8
Input requirements					
Input voltage Eac	V	85 to 132[Rating:100-120](DC.110 to 175V available)			
Input frequency	Hz	47 to 66[Rating:50-60](Single phase)			
Input current	A	0.4max.[AC.100/120V]			
Fuse rating	A	2[Internal]			
Surge current *3	A	18-22max.[AC.100-120V, 25°C, output rating, cold start]			
Leakage current	mA	0.5max.[25°C, input and output ratings]			
Efficiency	%	72typ.[25°C, input and output ratings]			
Output characteristics					
Output voltage	V	5	12	15	24
Voltage variable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4
Maximum output current*2	A	3	1.3	1	0.7
Overvoltage threshold	V	—	—	—	—
Overcurrent threshold	A	3.3 to 5	1.4 to 2.3	1.1 to 2	0.8 to 1.4
Voltage stability	Input variation	%	±1max.(±0.3typ.)(Within the input voltage range)		
	Load variation	%	±1.5max.(±0.6typ.)(10 to 100% load)		
	Temperature variation	%	±1max.(±0.3typ.)(0 to +60°C)		
	Drift	%	1max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]		
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]		
Ripple Ep-p	mV	60max.	80max.	80max.	100max.
Ripple noise Ep-p	mV	120max.			
Start up time	ms	100max.			
Hold up time	ms	20min.			
Accessory equipment					
Operation indicator		LED illuminates when voltage output is ON.			
Overvoltage protection		None			
Overcurrent protection		Fixed threshold, higher overcurrent detection point at low load, automatic recovery.			
Remote ON-OFF		None			
Remote sensing		None			
Current balance		None			
Standards					
Safety standards		UL1950D3, CSA ELECTRICAL BULLETIN No.1402 approved.			
Noise terminal voltage		FCC class B compliant.			
Construction					
External dimensions H×W×L	mm	20×70×95 With cover(Option)*4: 23×70×95			
Weight	g	200max. With cover(Option): 250max.			
Mounting method		Can be attached to 2 sides.			
Case material		Frame: Aluminum Cover(Option: 3JC0ZB145-FAK15CA):Steel			

*1 Output may fail to come on when operated in series.

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

*3 The surge current suppression element is a power thermistor.

*4 Derating is required when the optional cover is attached.

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25W TYPE

Part No.		FAK05-5R0*1	FAK12-2R1	FAK15-1R7	FAK24-1R1
Output voltage, current*2		5V • 5A	12V • 2.1A	15V • 1.7A	24V • 1.1A
Maximum output power	W	25	25.2	25.5	26.4
Input requirements					
Input voltage Eac	V	85 to 132[Rating: 100-120](DC.110 to 175V available)			
Input frequency	Hz	47 to 66[Rating: 50-60](Single phase)			
Input current	A	0.65max.[AC.100/120V]			
Fuse rating	A	2.5[Internal]			
Surge current *3	A	36-43max.[AC.100-120V, 25°C, output rating, cold start]			
Leakage current	mA	0.5max.[25°C, input and output ratings]			
Efficiency	%	70typ.[25°C, input and output ratings]			
Output characteristics					
Output voltage	V	5	12	15	24
Voltage variable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4
Maximum output current*2	A	5	2.1	1.7	1
Overvoltage threshold	V	6 to 6.9	13.7 to 15.7	17 to 19	27 to 30.5
Overcurrent threshold	A	5.5 to 7.5	2.3 to 3.3	1.9 to 2.8	1.2 to 1.8
Voltage stability	Input variation	%	±1max.(±0.3typ.)(Within the input voltage range]		
	Load variation	%	±1.5max.(±0.6typ.)(10 to 100% load]		
	Temperature variation	%	±1.5max.(±0.3typ.)(0 to +60°C]		
	Drift	%	0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]		
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]		
Ripple Ep-p	mV	80max.	80max.	80max.	100max.
Ripple noise Ep-p	mV	120max.	190max.	220max.	310max.
Start up time	ms	100max.			
Hold up time	ms	20min.			
Accessory equipment					
Operation indicator		LED illuminates when voltage output is ON.			
Overvoltage protection		Voltage shielding type, recovers upon reset, set value fixed.			
Overcurrent protection		Fixed threshold, higher overcurrent detection point at low load, automatic recovery.			
Remote ON-OFF		None			
Remote sensing		None			
Current balance		None			
Standards					
Safety standards		UL1950D3, CSA ELECTRICAL BULLETIN No.1402 approved.			
Noise terminal voltage		FCC class B compliant.			
Construction					
External dimensions H×W×L	mm	25×70×115 With cover(Option)*4: 28.5×70×115			
Weight	g	220max. With cover(Option): 300max.			
Mounting method		Can be attached to 2 sides.			
Case material		Frame: Aluminum Cover(Option: 2JC0ZB146-FAK25CA):Steel			

*1 Output may fail to come on when operated in series.

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

*3 The surge current suppression element is a power thermistor.

*4 Derating is required when the optional cover is attached.

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50W TYPE

Part No.		FAK05-10R	FAK12-4R2	FAK15-3R4	FAK24-2R1
Output voltage, current*1		5V • 10A	12V • 4.2A	15V • 3.4A	24V • 2.1A
Maximum output power	W	50	50.4	51	50.4
Input requirements					
Input voltage Eac	V	85 to 132[Rating: 100-120](DC.110 to 175V available)			
Input frequency	Hz	47 to 66[Rating: 50-60](Single phase)			
Input current	A	1.2max.[AC.100/120V]			
Fuse rating	A	3.15[Internal]			
Surge current *2	A	36-43max.[AC.100-120V, 25°C, output rating, cold start]			
Leakage current	mA	0.5max.[25°C, input and output ratings]			
Efficiency	%	80typ.[25°C, input and output ratings]			
Output characteristics					
Output voltage	V	5	12	15	24
Voltage variable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4
Maximum output current*1	A	10	4.2	3.4	2.1
Overvoltage threshold	V	6 to 6.9	13.7 to 15.7	17 to 19	27 to 30.5
Overcurrent threshold	A	10.5 to 12	4.4 to 5.1	3.6 to 4.1	2.2 to 2.6
Voltage stability	Input variation	%	±1max.(±0.3typ.)[Within the input voltage range]		
	Load variation	%	±1.5max.(±0.6typ.)[10 to 100% load]		
	Temperature variation	%	±1max.(±0.3typ.)[0 to +60°C]		
	Drift	%	0.5max.[25°C, input and output ratings, after input voltage ON for 30min to 8h]		
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]		
Ripple Ep-p	mV	60max.	80max.	80max.	100max.
Ripple noise Ep-p	mV	Output voltage×1%+70max.[50MHz max. including ripple]			
Start up time	ms	100max.			
Hold up time	ms	20min.			
Accessory equipment					
Operation indicator		LED illuminates when voltage output is ON.			
Overvoltage protection		Voltage shielding type, recovers upon reset, set value fixed.			
Overcurrent protection		Fixed current and voltage threshold type, automatic recovery, set value fixed.			
Remote ON-OFF		None			
Remote sensing		None			
Current balance		None			
Standards					
Safety standards		UL1950D3, CSA ELECTRICAL BULLETIN No.1402 approved.			
Noise terminal voltage		FCC class B compliant.			
Construction					
External dimensions H×W×L	mm	25×95×130 With cover(Option)*3: 28.5×95×130			
Weight	g	300max. With cover(Option): 400max.			
Mounting method		Can be attached to 2 sides.			
Case material		Frame: Aluminum Cover(Option: 2JC00B147-FAK50CA):Steel			

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

*2 The surge current suppression element is a power thermistor.

*3 Derating is required when the optional cover is attached.

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SPECIFICATIONS

100W TYPE

Part No.		FAK05-20R	FAK12-8R3	FAK15-6R6	FAK24-4R2	FAK48-2R0
Output voltage, current*		5V • 20A	12V • 8.3A	15V • 6.6A	24V • 4.2A	48V • 2A
Maximum output power	W	100	99.6	99	100.8	96
Input requirements						
Input voltage Eac	V	85 to 132[Rating: 100-120]				
Input frequency	Hz	47 to 66[Rating: 50-60](Single phase)				
Input current	A	2.5max.[100/120V]				
Fuse rating	A	5[Internal]				
Surge current	A	25max.[100/120V, 1st surge current, reset after roughly 30s min.]				
Leakage current	mA	0.5max.[100/120V]				
Efficiency	%	82typ.	84typ.	85typ.	86typ.	87typ.
Output characteristics						
Output voltage	V	5	12	15	24	48
Voltage variable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4	43.2 to 52.8
Maximum output current*	A	20	8.3	6.6	4.2	2
Overvoltage threshold	V	6 to 6.9	13.7 to 15.7	17 to 19	27 to 30.5	53.5 to 60
Overcurrent threshold	A	21 to 24	8.7 to 10	7 to 8	4.4 to 5.2	2.1 to 2.4
Voltage stability	Input variation	%	2max.(1typ.)[Within the input voltage range]			
	Load variation	%	2max.(1typ.)[10 to 100% load]			
	Temperature variation	%	2max.(1typ.)[0 to +50°C]			
	Drift	%	0.5max.(0.1typ.)[25°C, input and output ratings, after input voltage ON for 30min to 8h]			
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]			
Ripple Ep-p	mV	60max.	80max.	80max.	100max.	200max.
Ripple noise Ep-p	mV	120max.	190max.	220max.	310max.	400max.
Start up time	ms	200max.[100V]				
Hold up time	ms	20min.[100V]				
Accessory equipment						
Operation indicator		LED(green) illuminates when voltage output is ON.				
Overvoltage protection		Voltage shielding type, recovers upon reset.				
Overcurrent protection		Fixed current and voltage threshold type, automatic recovery.				
Remote ON-OFF		None				
Remote sensing		Yes				
Output voltage external variable function		None				
Standards						
Safety standards		UL1950, CSA ELECTRICAL BULLETIN No.1402C approved.				
Noise terminal voltage		FCC class B compliant.				
Construction						
External dimensions H×W×L	mm	35×95×165 With cover(Option): 40×95×165				
Weight	g	600max.				
Mounting method		Can be attached to 2 sides.				
Case material		Frame: Aluminum Cover(Option: 2JC0ZB390-FAK100CA):Steel				

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

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AC Input

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SPECIFICATIONS

150W TYPE

Part No.		FAK05-30R	FAK12-12R	FAK15-10R	FAK24-6R0	FAK48-3R0
Output voltage, current*		5V • 30A	12V • 12A	15V • 10A	24V • 6A	48V • 3A
Maximum output power	W	150	144	150	144	144
Input requirements						
Input voltage Eac	V	85 to 132[Rating: 100-120]				
Input frequency	Hz	47 to 66[Rating: 50-60](Single phase)				
Input current	A	3.5max.[100/120V]				
Fuse rating	A	6.3[Internal]				
Surge current	A	25max.[100/120V, 1st surge current, reset after roughly 30s min.]				
Leakage current	mA	0.5max.[100/120V]				
Efficiency	%	82typ.	84typ.	85typ.	86typ.	88typ.
Output characteristics						
Output voltage	V	5	12	15	24	48
Voltage variable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5	21.6 to 26.4	43.2 to 52.8
Maximum output current*	A	30	12	10	6	3
Overvoltage threshold	V	6 to 6.9	13.7 to 15.7	17 to 19	27 to 30.5	53.5 to 60
Overcurrent threshold	A	32 to 36	13 to 15	11 to 13	6.3 to 7.5	3.3 to 3.7
Voltage stability	Input variation	%	2max.(1typ.)[Within the input voltage range]			
	Load variation	%	2max.(1typ.)[10 to 100% load]			
	Temperature variation	%	2max.(1typ.)[0 to +50°C]			
	Drift	%	0.5max.(0.1typ.)[25°C, input and output ratings, after input voltage ON for 30min to 8h]			
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]			
Ripple Ep-p	mV	60max.	80max.	80max.	100max.	200max.
Ripple noise Ep-p	mV	120max.	190max.	220max.	310max.	400max.
Start up time	ms	200max.[100V]				
Hold up time	ms	20min.[100V]				
Accessory equipment						
Operation indicator		LED (green) illuminates when voltage output is ON.				
Overvoltage protection		Voltage shielding type, recovers upon reset(interval approx. 40s).				
Overcurrent protection		Fixed current and voltage threshold type, automatic recovery.				
Remote ON-OFF		None				
Remote sensing		Yes				
Output voltage external variable function		None				
Standards						
Safety standards		UL1950, CSA ELECTRICAL BULLETIN No.1402C approved.				
Noise terminal voltage		FCC class B compliant.				
Construction						
External dimensions H×W×L	mm	40×95×200 With cover(Option): 45×95×200				
Weight	kg	1max.				
Mounting method		Can be attached to 2 sides.				
Case material		Frame: Aluminum Cover(Option: 2JC0ZB391-FAK150CA):Steel				

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

Power Supplies

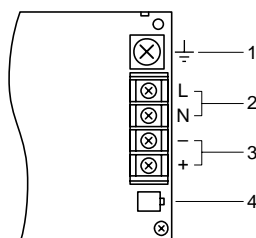
FAK Series

AC Input

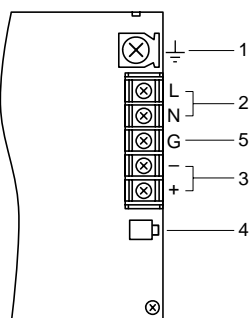
Single Output, General-Purpose

TERMINAL DESIGNATIONS AND FUNCTIONS

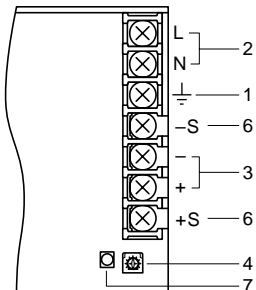
15W, 25W TYPE



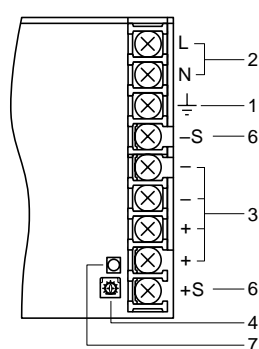
50W TYPE



100W TYPE



150W TYPE



Terminal No. 1: Frame ground terminal(\perp)

Terminal No. 2: AC input terminals(L, N)

Terminal No. 3: DC output terminals(+, -)

Terminal No. 4: Output voltage adjustment trim

Terminal No. 5: Ground terminal(G)

Terminal No. 6: Remote sensing terminals(+S, -S)

Terminal No. 7: Operation indicator LED