

Power Supplies

FAK Series

AC Input

Single Output, General-Purpose

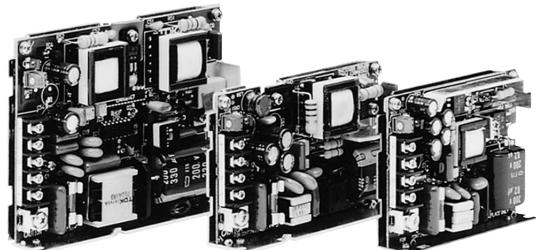
FEATURES

- 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		Part No.
	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
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
Voltage variable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5
Maximum output current ^{*2}	A	3	1.3	1
Oversupply threshold	V	—	—	—
Oversupply threshold	A	3.3 to 5	1.4 to 2.3	1.1 to 2
Input variation	%	±1max.(±0.3typ.)(Within the input voltage range)		
Load variation	%	±1.5max.(±0.6typ.)(10 to 100% load)		Total variation ±3max.(±1typ.)
Voltage stability	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.
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.		
Oversupply protection		None		
Oversupply protection		Fixed threshold, higher oversupply 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 HxWxL	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
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
Voltage variable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5
Maximum output current ^{*2}	A	5	2.1	1.7
Oversupply threshold	V	6 to 6.9	13.7 to 15.7	17 to 19
Oversupply threshold	A	5.5 to 7.5	2.3 to 3.3	1.9 to 2.8
Input variation	%	±1max.(±0.3typ.)(Within the input voltage range)		
Load variation	%	±1.5max.(±0.6typ.)(10 to 100% load)		Total variation ±3max.(±1typ.)
Voltage stability	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.
Ripple noise Ep-p	mV	120max.	190max.	220max.
Start up time	ms	100max.		
Hold up time	ms	20min.		
Accessory equipment				
Operation indicator		LED illuminates when voltage output is ON.		
Oversupply protection		Voltage shielding type, recovers upon reset, set value fixed.		
Oversupply protection		Fixed threshold, higher oversupply 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 HxWxL	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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SPECIFICATIONS

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
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
Voltage variable range	V	4.5 to 5.5	10.8 to 13.2	13.5 to 16.5
Maximum output current*1	A	10	4.2	3.4
Overvoltage threshold	V	6 to 6.9	13.7 to 15.7	17 to 19
Overcurrent threshold	A	10.5 to 12	4.4 to 5.1	3.6 to 4.1
Input variation	%	±1max.(±0.3typ.)(Within the input voltage range)		
Load variation	%	±1.5max.(±0.6typ.)(10 to 100% load)		Total variation ±3max.(±1typ.)
Voltage stability	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.
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
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.
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*	A	20	8.3	6.6	4.2
Oversupply threshold	V	6 to 6.9	13.7 to 15.7	17 to 19	27 to 30.5
Oversupply threshold	A	21 to 24	8.7 to 10	7 to 8	4.4 to 5.2
Input variation	%	2max.(1typ.)(Within the input voltage range)			
Load variation	%	2max.(1typ.)(10 to 100% load)			Total variation ±2max.(±1typ.)
Voltage stability	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.
Ripple noise Ep-p	mV	120max.	190max.	220max.	310max.
Start up time	ms	200max.[100V]			
Hold up time	ms	20min.[100V]			
Accessory equipment					
Operation indicator		LED(green) illuminates when voltage output is ON.			
Oversupply protection		Voltage shielding type, recovers upon reset.			
Oversupply 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 HxWxL	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

Single Output, General-Purpose

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
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.
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*	A	30	12	10	6
Overvoltage threshold	V	6 to 6.9	13.7 to 15.7	17 to 19	27 to 30.5
Overcurrent threshold	A	32 to 36	13 to 15	11 to 13	6.3 to 7.5
Input variation	%	2max.(1typ.){Within the input voltage range}			
Load variation	%	2max.(1typ.){10 to 100% load}			Total variation ±2max.(±1typ.)
Voltage stability	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.
Ripple noise Ep-p	mV	120max.	190max.	220max.	310max.
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 HxWxL	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.

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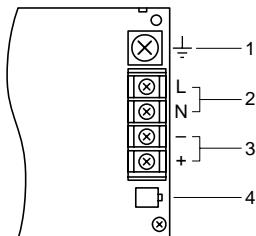
FAK Series

AC Input

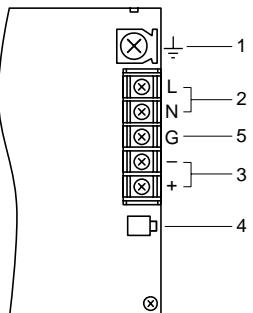
Single Output, General-Purpose

TERMINAL DESIGNATIONS AND FUNCTIONS

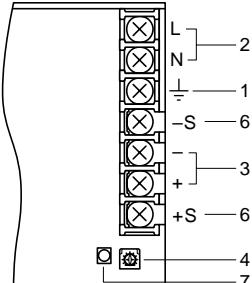
15W, 25W TYPE



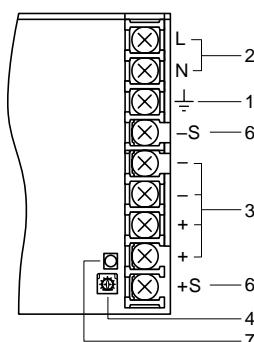
50W TYPE



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