

Power Supplies

FMW Series

AC Input

Multi Output, General-Purpose

FEATURES

- Since input voltage can be selected over a range of AC. 85 to 264V(AC.100-200V rating), these power supplies are compatible with industrial power voltages throughout the world.
- Open frame and low price.

PART NUMBERS AND RATINGS

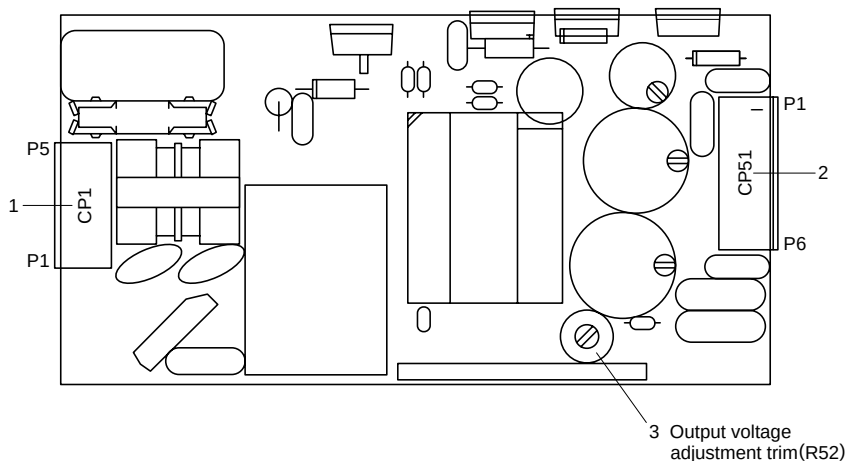
Part No.	Maximum output power*(W)	Output current(A)				
		+5V	+12V	-12V	+15V	-15V
FMW-011	8.6	0.1 to 1	0 to 0.2	0 to 0.1	—	—
FMW-021	16	0.4 to 2	0 to 0.3	0 to 0.2	—	—
FMW-022	17.5	0.4 to 2	—	—	0 to 0.3	0 to 0.2
FMW-031	35	1 to 5	0.5 to 1.2	0 to 0.3	—	—
FMW-051	50	1 to 5	0.5 to 2	0 to 0.3	—	—

* Total output power(sum of the respective[output voltage×output current] values) can not exceed this maximum output power.

TERMINAL DESIGNATIONS AND FUNCTIONS

- Placement of the non-terminal component parts is different for FMW01.

FMW01/FMW02



1: CP1

P1 G Ground terminal: Connect this to ground.

P2 —

P3 N

P4 — AC input terminals: Connect to AC.100/115 or 200/230V single phase power supply.

P5 L

2: CP51

P1 V3 DC output terminal: Connect to load line.

V3 is a +12 or +15V output terminal.

P2 G2 DC output terminal: Connect to load.

This is the return side(0V) of V2 and V3.

P3 V2 DC output terminal: Connect to load line.

V2 is a -12 or -15V output terminal.

P4 V1 DC output terminal: Connect to load line.

V1 is a 5V output terminal.

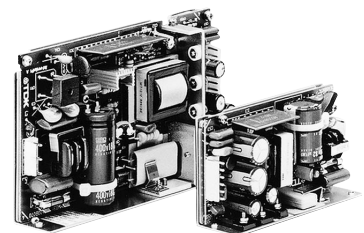
P5 G1

P6 G1 DC output terminal: Connect to load line.

This is the V1 return side(0V).

3: R52

Output voltage adjustment trim: Although the voltage variation is fixed, V1 (+5V) alone can be increased by clockwise rotation of R52. Variation limits are ±3% since this trim is only used for fine tuning.



- G1 and G2 are floating. These are connected by a capacitor rated for 50V.

⚠ Specifications which provide more details for the proper and safe use of the described product are available upon request.

All specifications are subject to change without notice. <http://www.rfoe.net/> TEL:0755-83397033 FAX:0755-83376182 E-MAIL:szss20@163.com

Power Supplies

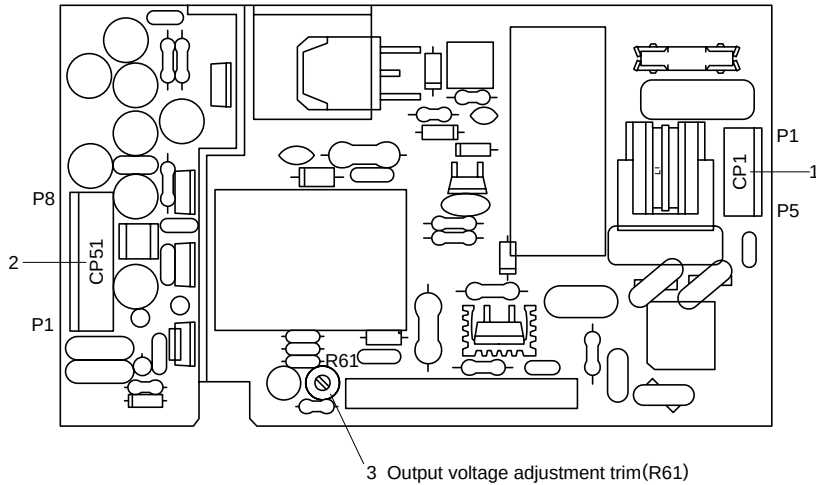
FMW Series

AC Input

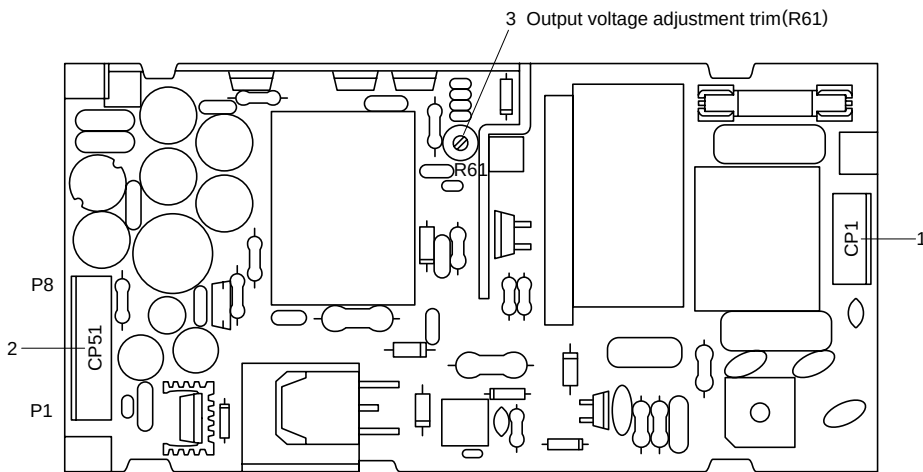
Multi Output, General-Purpose

TERMINAL DESIGNATIONS AND FUNCTIONS

FMW03



FMW05



1: CP1

P1 L } AC input terminals: Connect to AC.100/115 or 200/230V single
P2 — } phase power supply.
P3 N
P4 —

P5 G Ground terminal: Connect this to ground.

2: CP51

P1 V3 DC output terminal: Connect to load line.
V3 is a -12V output terminal.

P2 G2 DC output terminal: Connect to load.
This is the return side(0V) of V3.

P3 V2 DC output terminal: Connect to load line.
V2 is a +12V output terminal.

P4 V2
P5 G1 DC output terminal: Connect to load line.
This is the V1 and V2 return(0V) side.

P6 G1

P7 V1 DC output terminal: Connect to load line.
V1 is a +5V output terminal.

P8 V1

3: R61

Output voltage adjustment trim: Although the voltage variation is fixed, V1 (+5V) and V2 (+12V) can be increased by clockwise rotation of R61(V1 is coupled to V2). Variation limits are $\pm 3\%$ since this trim is only used for fine tuning.

Power Supplies

FMW Series

AC Input

Multi Output, General-Purpose

SPECIFICATIONS

8W TYPE

Part No.	FMW-011			
Output voltage, current*1	V ₁	5V • 1A		
	V ₂	−12V • 0.1A		
	V ₃	+12V • 0.2A		
Maximum output power	W	8.6		
Input requirements				
Input voltage Eac	V	85 to 264		
Input frequency	Hz	47 to 66[Single phase]		
Input current	A	0.4max.[100-120V]/0.2max.[200-240V]		
Fuse rating	A	1[Internal]		
Surge current	A	10max.[100-120V, cold start]/20max.[200-240V, cold start]		
Leakage current	mA	0.5max.[100-120V]/0.75max.[200-240V]		
Efficiency	%	66typ.		
Output characteristics				
Output voltage	V	5(V ₁)	−12(V ₂)	+12(V ₃)
Voltage variable range	V	Fixed	Fixed	Fixed
Maximum output current*1	A	1	0.1	0.2
Minimum output current*2	A	0.1	0	0
Output setting conditions	Voltage	V	5±0.05	—
	Current	A	1	0.1
Voltage stability	Input variation	%	+5V(V ₁):±1.5max., −12V(V ₂) • +12V(V ₃):1max.[85 to 132V/170 to 264V]	
	Load variation*3	%	1.5max.	1max.
	Temperature variation	%	2max.[0 to +50°C]	2max.[0 to +50°C]
	Total variation	%	±4max.	±6max.
	Drift	%	0.5max.[After input voltage ON for 30min to 8h]	
	Dynamic load	%/ms	±4max./1max.[50 to 100% sudden load change]	
Ripple Ep-p	mV	100max.	60max.	60max.
Ripple noise Ep-p	mV	150max.	290max.	290max.
Start up time	ms	300max.		
Hold up time	ms	20typ.		
Accessory equipment				
Operation indicator	None			
Overvoltage protection	Only 5V built-in protection, voltage shielding type(Overvoltage threshold: 6 to 6.9V)			
Overcurrent protection	9.1W min., total power type			
Remote ON-OFF	None			
Remote sensing	None			
Current balance	None			
Output voltage external variable function	None			
Standards				
Safety standards	UL1950 D3, CSA ELECTRICAL BULLETIN No.1402C approved.			
Noise terminal voltage	FCC class B compliant.			
Construction				
External dimensions H×W×L	mm	25×60×110		
Weight	g	220max.		
Mounting method	Can be attached to 2 sides.			
Case and cover	None (Open frame)			
Input and output cables	Sold separately, for input:4EU10B074/for output:4EU20B074(Wire material:UL1015/1007, AWG18/20, 0.5m long)			

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

*2 Normal output voltages might possibly not be maintained if outputs V₂, V₃ fall below V₁ minimum current values.

*3 Only the load being measured was varied(from minimum output current to maximum output current). Other outputs currents were at their maximum values.

Power Supplies

FMW Series

AC Input

Multi Output, General-Purpose

SPECIFICATIONS

15W TYPE

Part No.		FMW-021			FMW-022			
Output voltage, current*1	V ₁	5V • 2A			5V • 2A			
	V ₂	−12V • 0.2A			−15V • 0.2A			
	V ₃	+12V • 0.3A			+15V • 0.3A			
Maximum output power	W	16			17.5			
Input requirements								
Input voltage Eac	V	85 to 264			85 to 264			
Input frequency	Hz	47 to 66[Single phase]			47 to 66[Single phase]			
Input current	A	0.5max.[100V input]/0.3max.[200V input, maximum output rated power, internal fuse rating:1A]						
Surge current	A	20max.[25°C, 100V input, output rating, cold start]						
Leakage current	mA	0.5max.[25°C, 100V input, input and output ratings]						
Efficiency	%	67typ.[25°C, input and output ratings]						
Output characteristics								
Output voltage	V	5[V ₁]	−12[V ₂]	+12[V ₃]	5[V ₁]	−15[V ₂]	+15[V ₃]	
Voltage variable range	V	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	
Maximum output current*1	A	2	0.2	0.3	2	0.2	0.3	
Minimum output current*2	A	0.4	0	0	0.4	0	0	
Output setting conditions	Voltage	V	5±0.02	—	—	5±0.02	—	—
	Current	A	2	0.2	0.3	2	0.2	0.3
Voltage stability	Input variation	%	+5V(V ₁):±1max., V ₂ • V ₃ :±5max.			[85 to 132V/170 to 264V]		
	Load variation*3	%				[Minimum output current to maximum output current]		
	Temperature variation	%	1max.[0 to +50°C]	2max.[0 to +50°C]	2max.[0 to +50°C]	1max.[0 to +50°C]	2max.[0 to +50°C]	2max.[0 to +50°C]
	Drift	%	0.5max.[After input voltage ON for 30min to 8h]					
	Dynamic load	%/ms	4max./2max.[50 to 100% sudden load change]					
Ripple Ep-p	mV	100	60	60	100	60	60	
Ripple noise Ep-p	mV	150	290	290	150	350	350	
Start up time	ms	100max.						
Hold up time	ms	20typ.						
Accessory equipment								
Operation indicator		None						
Overvoltage protection		Only 5V built-in protection, output voltage shielding type, recovers upon reset.						
Overcurrent protection		Voltage threshold type, automatic recovery.						
Remote ON-OFF		None						
Remote sensing		None						
Output voltage external variable function		None						
Standards								
Safety standards		UL478, CSA ELECTRICAL BULLETIN No.1402 approved.						
Noise terminal voltage		FCC class B, VDE0871 class B compliant.						
Construction								
External dimensions H×W×L	mm	30×60×110						
Weight	g	240max.						
Mounting method		Can be attached to 2 sides.						
Case and cover		None (Open frame)						
Input and output cables		Sold separately, for input:4EU10B074/for output:4EU20B074(Wire material:UL1015/1007, AWG18/20, 0.5m long)						

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

*2 Normal output voltages might possibly not be maintained if outputs V₂, V₃ fall below V₁ minimum current values.

*3 Only the load being measured was varied(from minimum output current to maximum output current). Other outputs currents were at their maximum values.

Power Supplies

FMW Series

AC Input

Multi Output, General-Purpose

SPECIFICATIONS

35W TYPE

Part No.		FMW-031		
Output voltage, current*1	V ₁	5V • 5A		
	V ₂	+12V • 1.2A		
	V ₃	−12V • 0.3A		
Maximum output power	W	35		
Input requirements				
Input voltage Eac	V	85 to 264		
Input frequency	Hz	47 to 66[Single phase]		
Input current	A	0.9max.[100V input]/0.5max.[200V input, maximum output rated power, internal fuse rating:3A]		
Surge current	A	45max.[25°C, 100V input, output rating, cold start]		
Leakage current	mA	0.5max. [25°C, 100V input, input and output ratings]		
Efficiency	%	72typ. [25°C, input and output ratings]		
Output characteristics				
Output voltage	V	5[V ₁]	+12[V ₂]	−12[V ₃]
Voltage variable range	V	Fixed	Fixed	Fixed
Maximum output current*1	A	5	1.2	0.3
Minimum output current*2	A	1	0.5	0
Output setting conditions	Voltage	V	5.06±0.02	—
	Current	A	3.4	1.2
Voltage stability	Input variation	%	+5V(V ₁):±4max., +12V(V ₂) • −12V(V ₃):±5max.	
	Load variation*3	%	[85 to 132V/170 to 264V]	
	Temperature variation	%	3max.[0 to +50°C]	3max.[0 to +50°C]
	Drift	%	0.5max.[After input voltage ON for 30min to 8h]	
	Dynamic load	%/ms	4max./2max.[50 to 100% sudden load change]	
Ripple Ep-p	mV	100	200	200
Ripple noise Ep-p	mV	150	290	290
Start up time	ms	100max.		
Hold up time	ms	20typ.		
Accessory equipment				
Operation indicator		None		
Overvoltage protection		Only 5V built-in protection, output voltage shielding type, recovers upon reset.		
Overcurrent protection		Voltage threshold type, automatic recovery.		
Remote ON-OFF		None		
Remote sensing		None		
Output voltage external variable function		None		
Standards				
Safety standards		UL478, CSA ELECTRICAL BULLETIN No.1402B approved.		
Noise terminal voltage		FCC class B, VDE0871 class B compliant.		
Construction				
External dimensions H×W×L	mm	30×95×158[Except input and output terminals.]		
Weight	g	400max.		
Mounting method		Can be attached to 2 sides.		
Case and cover		None (Open frame)		
Input and output cables		Sold separately, for input:4EU10B074/for output:4EU20B070(Wire material:UL1015/1007, AWG18/20, 0.5m long)		

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

*2 Normal output voltages might possibly not be maintained if outputs V₂, V₃ fall below V₁ minimum current values.

*3 Only the load being measured was varied(from minimum output current to maximum output current). Other outputs currents were at their maximum values.

Power Supplies

FMW Series

AC Input

Multi Output, General-Purpose

SPECIFICATIONS

50W TYPE

Part No.		FMW-051		
Output voltage, current*1	V ₁	+5V • 5A		
	V ₂	+12V • 2A		
	V ₃	−12V • 0.3A		
Maximum output power	W	50		
Input requirements				
Input voltage Eac	V	85 to 264		
Input frequency	Hz	47 to 66[Single phase]		
Input current	A	1.5max.[100V input]/0.9max.[200V input, maximum output rated power, internal fuse rating:4A]		
Surge current	A	45max.[25°C, 100V input, output rating, cold start]		
Leakage current	mA	0.5max.[25°C, 100V input, input and output ratings]		
Efficiency	%	73typ.[25°C, input and output ratings]		
Output characteristics				
Output voltage	V	+5[V ₁]	+12[V ₂]	−12[V ₃]
Voltage variable range	V	Fixed	Fixed	Fixed
Maximum output current*1	A	5	2	0.3
Minimum output current*2	A	1	0.5	0
Output setting conditions	Voltage	V	5±0.02	—
	Current	A	4.5	2
Voltage stability	Input variation	%	+5V(V ₁):±4max., V ₂ • V ₃ :±5max.	
	Load variation*3	%	[Within the input voltage range] [Minimum output current to maximum output current]	
	Temperature variation	%	3max.[0 to +50°C]	3max.[0 to +50°C]
	Drift	%	0.5max.[After input voltage ON for 30min to 8h]	
	Dynamic load	%/ms	4max./2max.[50 to 100% sudden load change]	
Ripple Ep-p	mV	100	200	200
Ripple noise Ep-p	mV	150	290	290
Start up time	ms	100max.		
Hold up time	ms	20typ.		
Accessory equipment				
Operation indicator		None		
Overvoltage protection		Only 5V built-in protection, output voltage shielding type, recovers upon reset.		
Overcurrent protection		Voltage threshold type, automatic recovery.		
Remote ON-OFF		None		
Remote sensing		None		
Output voltage external variable function		None		
Standards				
Safety standards		—		
Noise terminal voltage		FCC class B, VDE0871 class B compliant.		
Construction				
External dimensions H×W×L	mm	30×95×180		
Weight	g	500max.		
Mounting method		Can be attached to 3 sides.		
Case and cover		None (Open frame)		
Input and output cables		Sold separately, for input:4EU10B070/for output:4EU20B070(Wire material:UL1015/1007, AWG18/20, 0.5m long)		

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

*2 Normal output voltages might possibly not be maintained if outputs V₂, V₃ fall below V₁ minimum current values.

*3 Only the load being measured was varied(from minimum output current to maximum output current). Other outputs currents were at their maximum values.

SUNSTAR 商斯达实业集团是集研发、生产、工程、销售、代理经销、技术咨询、信息服务等为一体的高科技企业，是专业高科技电子产品生产厂家，是具有 10 多年历史的专业电子元器件供应商，是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一，是一家专业代理和分销世界各大品牌 IC 芯片和电子元器件的连锁经营综合性国际公司，专业经营进口、国产名厂名牌电子元件，型号、种类齐全。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商，已在全国范围内建成强大统一的供货和代理分销网络。我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM 电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA 软件硬件、二极管、三极管、模块等，是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。商斯达实业公司拥有庞大的资料库，有数位毕业于著名高校——有中国电子工业摇篮之称的西安电子科技大学（西军电）并长期从事国防尖端科技研究的高级工程师为您精挑细选、量身订做各种高科技电子元器件，并解决各种技术问题。

微波光电部专业代理经销高频、微波、光纤、光电元器件、组件、部件、模块、整机；电磁兼容元器件、材料、设备；微波 CAD、EDA 软件、开发测试仿真工具；微波、光纤仪器仪表。欢迎国外高科技微波、光纤厂商将优秀产品介绍到中国、共同开拓市场。长期大量现货专业批发高频、微波、卫星、光纤、电视、CATV 器件：晶振、VCO、连接器、PIN 开关、变容二极管、开关二极管、低噪晶体管、功率电阻及电容、放大器、功率管、MMIC、混频器、耦合器、功分器、振荡器、合成器、衰减器、滤波器、隔离器、环行器、移相器、调制解调器；光电子器件和组件：红外发射管、红外接收管、光电开关、光敏管、发光二极管和发光二极管组件、半导体激光二极管和激光器组件、光电探测器和光接收组件、光发射接收模块、光纤激光器和光放大器、光调制器、光开关、DWDM 用光发射和接收器件、用户接入系统光收发器件与模块、光纤连接器、光纤跳线/尾纤、光衰减器、光纤适配器、光隔离器、光耦合器、光环行器、光复用器/转换器；无线收发芯片和模组、蓝牙芯片和模组。

更多产品请看本公司产品专用销售网站：

商斯达微波光电产品网：[HTTP://www.rfoe.net/](http://www.rfoe.net/)

商斯达中国传感器科技信息网：<http://www.sensor-ic.com/>

商斯达工控安防网：<http://www.pc-ps.net/>

商斯达电子元器件网：<http://www.sunstare.com/>

商斯达消费电子产品网：<http://www.icasic.com/>

商斯达实业科技产品网：<http://www.sunstars.cn/> 射频微波光电元器件销售热线：

地址：深圳市福田区福华路福庆街鸿图大厦 1602 室

电话：0755-83396822 83397033 83398585 82884100

传真：0755-83376182 (0) 13823648918 MSN: SUNS8888@hotmail.com

邮编：518033 E-mail:szss20@163.com QQ: 195847376

深圳赛格展销部：深圳华强北路赛格电子市场 2583 号 电话：0755-83665529 25059422

技术支持：0755-83394033 13501568376

欢迎索取免费详细资料、设计指南和光盘；产品凡多，未能尽录，欢迎来电查询。

北京分公司：北京海淀区知春路 132 号中发电子大厦 3097 号

TEL: 010-81159046 82615020 13501189838 FAX: 010-62543996

上海分公司：上海市北京东路 668 号上海赛格电子市场 D125 号

TEL: 021-28311762 56703037 13701955389 FAX: 021-56703037

西安分公司：西安高新开发区 20 所(中国电子科技集团导航技术研究所)

西安劳动南路 88 号电子商城二楼 D23 号

TEL: 029-81022619 13072977981 FAX:029-88789382