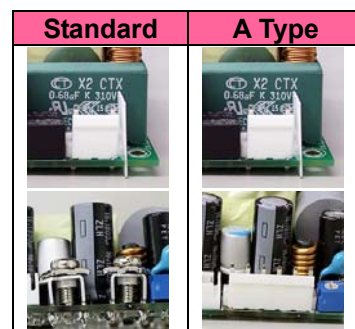


MQF2400 SERIES

240 Watts

KEY FEATURES

- Open Frame Medical Switching Power Supply
- Cooling by Natural Air Convection
- 160 Watts and 240 Watt with 10CFM Forced Air
- 4000VAC Input to Output 2MOPP Insulation
- High Efficiency up to 94%
- With P.F.C. Function >0.9
- <0.5W No Load Input Power
- Built-in 12V / 0.5A Fan Supply
- EMI for Both Class I (with PE) and Class II (without PE) Configuration
- Suitable for BF Application with Appropriate System Consideration
- UL / IEC / EN 60601 3.2 Edition & UL / IEC / EN 62368 Safety Approvals
- 3-Year Product Warranty



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.



(except for 15S)

ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		MQF2400-12S	MQF2400-15S	MQF2400-24S	MQF2400-48S
Max Output Wattage (with 10CFM FAN) (W)		240 W			
Max Output Wattage (Natural Convection) (W)		160 W			
Input	Voltage (Note 4)	90-264 VAC			
	Frequency (Hz)	47-63 Hz			
	Current (Full load)	< 3.0 A max. (115 VAC) / < 1.5 A max. (230 VAC)			
	Inrush Current (<2ms)	< 45 A max. (115 VAC) / < 90 A max. (230 VAC)			
	Leakage Current	< 0.1mA / 264 VAC (Touch Current)			
	Power Factor	PF>0.9 at Full Load			
	No Load	< 0.5W (115 / 230 VAC)			
Output	Voltage (V.DC.)	12V	15V	24V	48V
	Voltage Adj Range (V.DC.)	±4% Output Voltage			
	Voltage Accuracy	±2%			
	Current (with 10CFM FAN) (A) (max.)	20	16	10	5
	Current (Natural Convection) (A) (max.)	13.3	10.667	6.66	3.33
	Line Regulation	±1%			
	Load Regulation (0-100%)	±1%			
	Minimum Load	0%			
	Maximum Capacitive Load	8000μF	2000μF	3000μF	470μF
	Ripple & Noise (max.) (Note 1)	1% Vout			
	Efficiency (at 230VAC) (Note 6)	92.5%	92.5%	93%	94%
	Hold-up Time (at 115 VAC) (Note 2)	10 ms min.			
Protection	Over Power Protection	Auto recovery, Hiccup mode			
	Over Voltage Protection	Auto recovery			
	Over Temperature Protection	Auto recovery			
	Short Circuit Protection	Protection level 1 (nominal) : Continuous, Auto recovery Protection level 2 (instantaneous high current) : Latch			
Isolation	Input-Output (Note 5)	4000VAC or 5656VDC			
	Input-PE (Note 5)	2000VAC or 2828VDC			
	Output-PE (Note 5)	1500VAC or 2121VDC			

ELECTRICAL SPECIFICATIONS

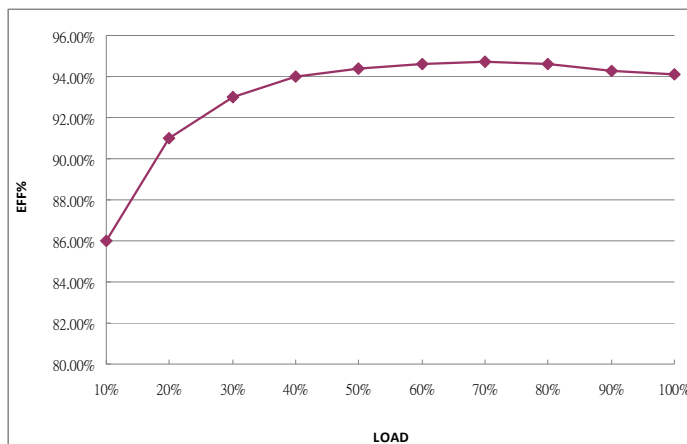
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		MQF2400-12S	MQF2400-15S	MQF2400-24S	MQF2400-48S
Environment	Operating Temperature (Note 9)	-30°C...+70°C (with derating)			
	Storage Temperature	-30°C...+85°C			
	Temperature Coefficient	±0.05%/°C			
	Altitude During Operation	5000m			
	Humidity	20~90% RH			
	Atmospheric Pressure	56 kPa to 106 kPa			
	MTBF	>250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)			
	Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)			
	Shock	IEC60068-2-27			
Physical	Dimensions (L x W x H)	4.1 x 2.05 x 1.087 Inches (103.9 x 52.0 x 27.6 mm) Tolerance ±0.5 mm			
	Weight	234 g			
	Cooling Method	Natural Convection / 10 CFM FAN			
Safety	Approval	12S/24S/48S: UL / IEC / EN 60601 3.2 rd Edition (2 x MOPP), UL / IEC / EN 62368-1			
	Approval / Meet	15S: UL / IEC / EN 60601 3.2 rd Edition (2 x MOPP), UL / IEC / EN 62368-1 (meet)			
EMC	Conducted EMI (Note 8)	EN55011 Conducted Class B			
	Radiated EMI (Note 8)	EN55011 Class I class B / Class II class A			
	EMS	EN60601-1-2 4th edition			

NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Fan Supply=12V/0.5A (max) for driving a fan..
4. Please check the derating curve for more details.
5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Arch power supply.
- 6.

Vin at 230 VAC & 48 Vout



(After 30 minutes of burn-in)

NOTE

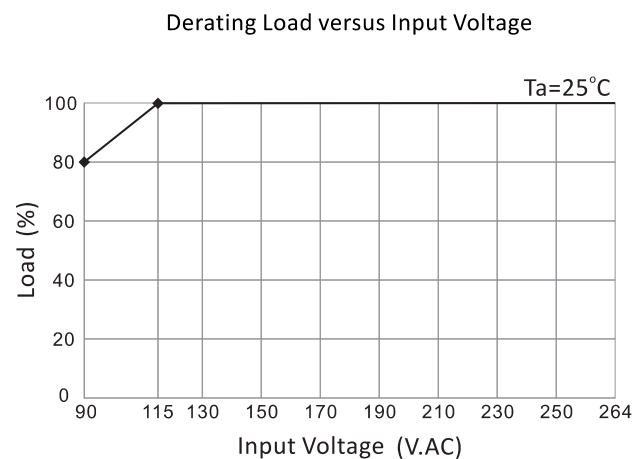
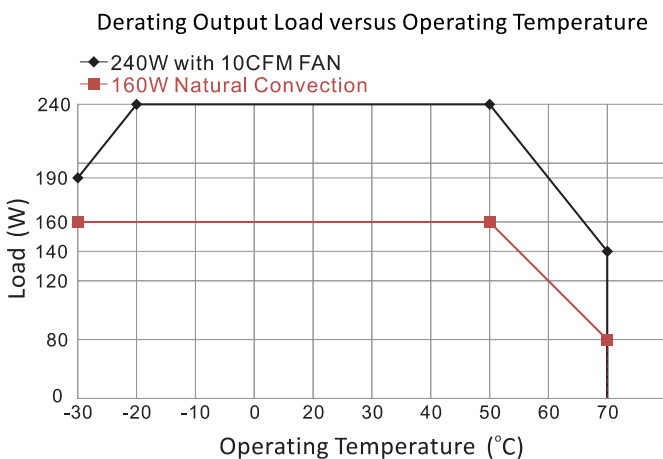
7. The FAN supply is designed to serve as the source of the additive external fan for the cooling of the power supply, enabling the full load delivery and assuring the best life span of the product. Please do not use this FAN supply to drive other devices.

For 12S, 24S, 48S			
Main Output Power	FAN Voltage (at 0.1A)	FAN Voltage (at 0.25A)	FAN Voltage (at 0.5A)
25%	12.1V	11.8V	11.5V
50%	12.2V	11.9V	11.7V
75%	12.3V	12.0V	11.8V
100%	12.5V	12.2V	11.9V

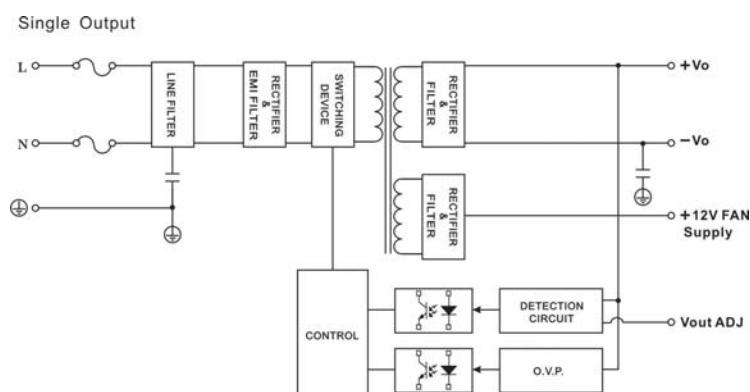
For 15S			
Main Output Power	FAN Voltage (at 0.1A)	FAN Voltage (at 0.25A)	FAN Voltage (at 0.5A)
25%	10.8V	10.2V	9.3V
50%	10.9V	10.3V	9.4V
75%	10.9V	10.4V	9.5V
100%	11.0V	10.4V	9.5V

8. Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment
9. Due to varying customer application conditions, the product is tested for maximum operating temperature under full load only. For other regulatory requirements, please contact ARCH.
- 10 CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
(ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)

DERATING

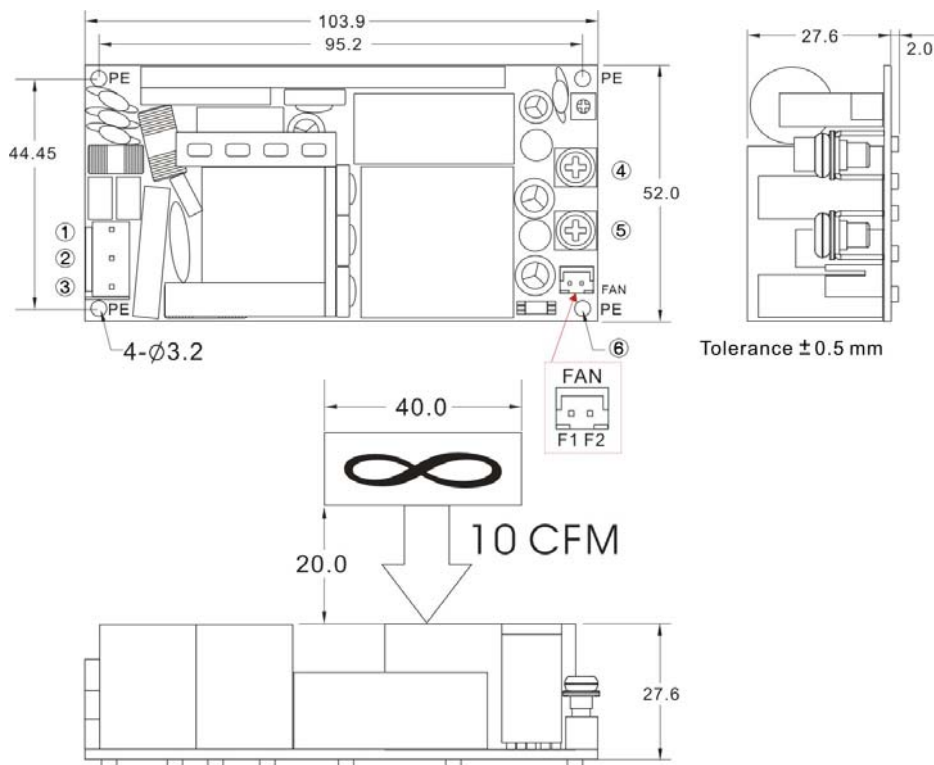


BLOCK DIAGRAM



MECHANICAL DIMENSIONS (Top View)

Standard



Standard



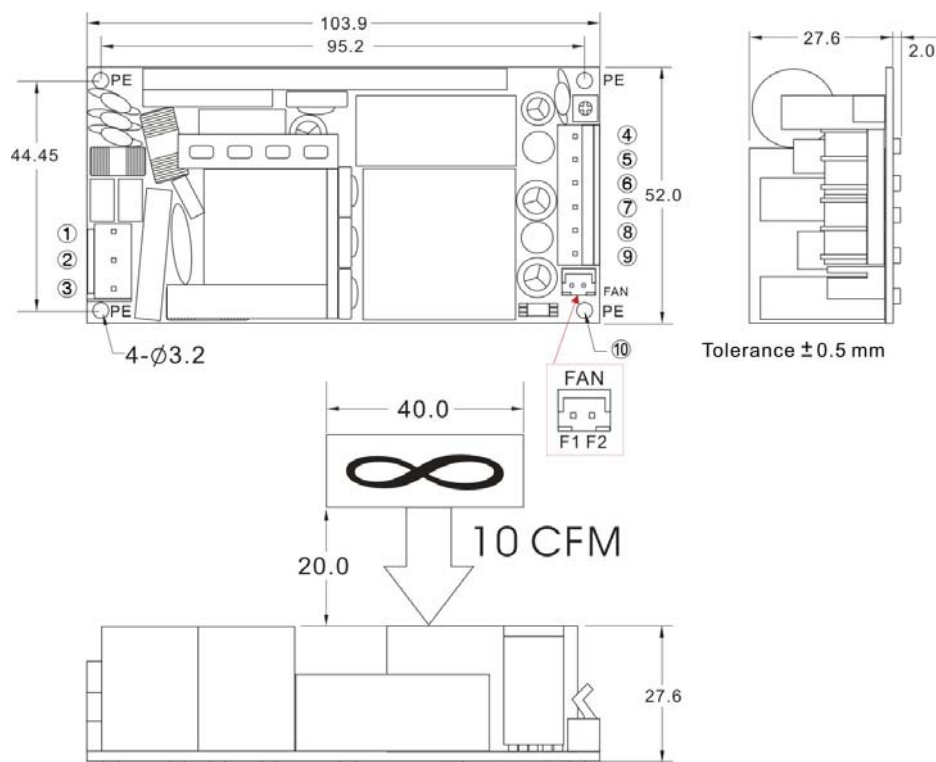
Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4	+DC OUT	Terminal : M3.5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.			
5	-DC OUT				
6	PE	—	—	—	—

Connector Pin (FAN)					
Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
F1	+AUX OUT	CX-H250-02	CX-T2501	XHP-2	SXH-002T-P0.6
F2	-AUX OUT				

MECHANICAL DIMENSIONS (Top View)

A Type



A Type



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4~6	+DC OUT	9396-6	96T series	VHR-6N	SVH-41T-P1.1
7~9	-DC OUT				
10	PE	—	—	—	—

Connector Pin (FAN)

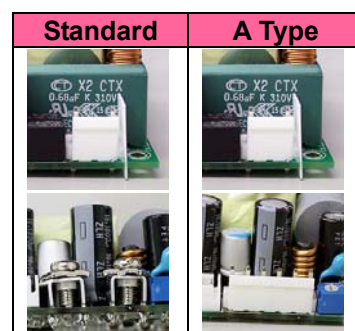
Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
F1	+AUX OUT	CX-H250-02	CX-T2501	XHP-2	SXH-002T-P0.6
F2	-AUX OUT				

MQF240U SERIES

240 Watts

KEY FEATURES

- U Bracket Medical Switching Power Supply
- Cooling by Natural Air Convection
- 160 Watts and 240 Watt with 10CFM Forced Air
- 4000VAC Input to Output 2MOPP Insulation
- High Efficiency up to 94%
- With P.F.C. Function >0.9
- <0.5W No Load Input Power
- Built-in 12V / 0.5A Fan Supply
- EMI for Both Class I (with PE) and Class II (without PE) Configuration
- Suitable for BF Application with Appropriate System Consideration
- UL / IEC / EN 60601 3.2 Edition & UL / IEC / EN 62368 Safety Approvals
- 3-Year Product Warranty



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.



ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		MQF240U-12S	MQF240U-15S	MQF240U-24S	MQF240U-48S
Max Output Wattage (with 10CFM FAN) (W)		240 W			
Max Output Wattage (Natural Convection) (W)		160 W			
Input	Voltage (Note 4)	90-264 VAC			
	Frequency (Hz)	47-63 Hz			
	Current (Full load)	< 3.0 A max. (115 VAC) / < 1.5 A max. (230 VAC)			
	Inrush Current (<2ms)	< 45 A max. (115 VAC) / < 90 A max. (230 VAC)			
	Leakage Current	< 0.1mA / 264 VAC (Touch Current)			
	Power Factor	PF>0.9 at Full Load			
	No Load	< 0.5W (115 / 230 VAC)			
Output	Voltage (V.DC.)	12V	15V	24V	48V
	Voltage Adj Range (V.DC.)	±4% Output Voltage			
	Voltage Accuracy	±2%			
	Current (with 10CFM FAN) (A) (max.)	20	16	10	5
	Current (Natural Convection) (A) (max.)	13.3	10.667	6.66	3.33
	Line Regulation	±1%			
	Load Regulation (0-100%)	±1%			
	Minimum Load	0%			
	Maximum Capacitive Load	8000μF	2000μF	3000μF	470μF
	Ripple & Noise (max.) (Note 1)	1% Vout			
	Efficiency (at 230VAC) (Note 6)	92.5%	92.5%	93%	94%
	Hold-up Time (at 115 VAC) (Note 2)	10 ms min.			
Protection	Over Power Protection	Auto recovery, Hiccup mode			
	Over Voltage Protection	Auto recovery			
	Over Temperature Protection	Auto recovery			
	Short Circuit Protection	Protection level 1 (nominal) : Continuous, Auto recovery Protection level 2 (instantaneous high current) : Latch			
Isolation	Input-Output (Note 5)	4000VAC or 5656VDC			
	Input-PE (Note 5)	2000VAC or 2828VDC			
	Output-PE (Note 5)	1500VAC or 2121VDC			

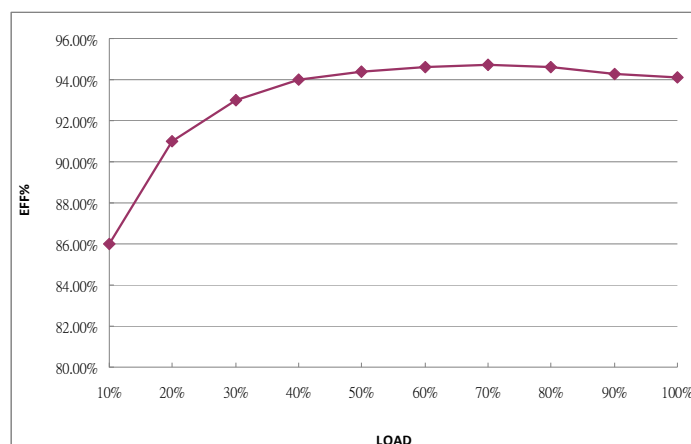
ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		MQF240U-12S	MQF240U-15S	MQF240U-24S	MQF240U-48S
Environment	Operating Temperature (Note 9)	-30°C...+70°C (with derating)			
	Storage Temperature	-30°C...+85°C			
	Temperature Coefficient	±0.05%/°C			
	Altitude During Operation	5000m			
	Humidity	20~90% RH			
	Atmospheric Pressure	56 kPa to 106 kPa			
	MTBF	>250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)			
	Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)			
	Shock	IEC60068-2-27			
Physical	Dimensions (L x W x H)	4.1 x 2.44 x 1.544 Inches (104.0 x 62.0 x 39.2 mm) Tolerance ±0.5 mm			
	Weight	297 g			
	Cooling Method	Natural Convection / 10 CFM FAN			
Safety	Approval	12S/24S/48S: UL / IEC / EN 60601 3.2 rd Edition (2 x MOPP), UL / IEC / EN 62368-1			
	Approval / Meet	15S: UL / IEC / EN 60601 3.2 rd Edition (2 x MOPP), UL / IEC / EN 62368-1 (meet)			
EMC	Conducted EMI (Note 8)	EN55011 Conducted Class B			
	Radiated EMI (Note 8)	EN55011 Class I class B / Class II class A			
	EMS	EN60601-1-2 4th edition			

NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Fan Supply=12V/0.5A (max) for driving a fan..
4. Please check the derating curve for more details.
5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Arch power supply.
6. Vin at 230 VAC & 48 Vout



(After 30 minutes of burn-in)

NOTE

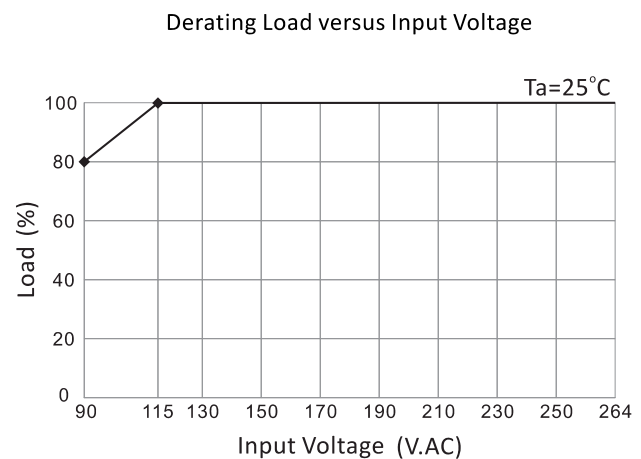
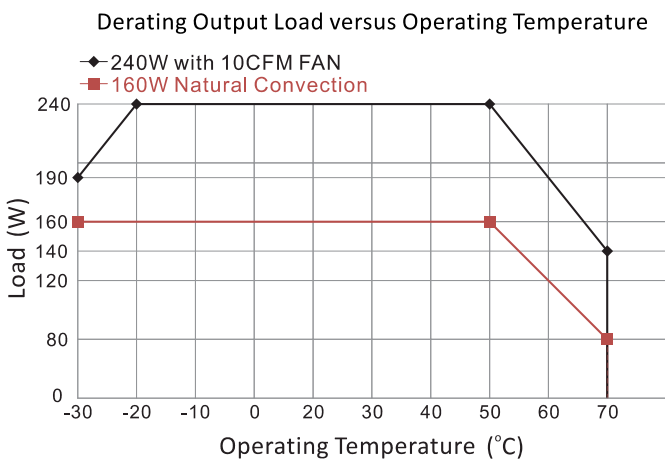
7. The FAN supply is designed to serve as the source of the additive external fan for the cooling of the power supply, enabling the full load delivery and assuring the best life span of the product. Please do not use this FAN supply to drive other devices.

For 12S, 24S, 48S			
Main Output Power	FAN Voltage (at 0.1A)	FAN Voltage (at 0.25A)	FAN Voltage (at 0.5A)
25%	12.1V	11.8V	11.5V
50%	12.2V	11.9V	11.7V
75%	12.3V	12.0V	11.8V
100%	12.5V	12.2V	11.9V

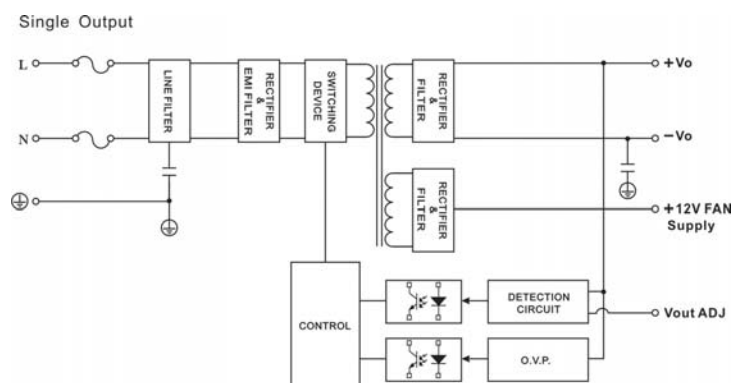
For 15S			
Main Output Power	FAN Voltage (at 0.1A)	FAN Voltage (at 0.25A)	FAN Voltage (at 0.5A)
25%	10.8V	10.2V	9.3V
50%	10.9V	10.3V	9.4V
75%	10.9V	10.4V	9.5V
100%	11.0V	10.4V	9.5V

8. Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment
9. Due to varying customer application conditions, the product is tested for maximum operating temperature under full load only. For other regulatory requirements, please contact ARCH.
10. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
(ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)

DERATING



BLOCK DIAGRAM

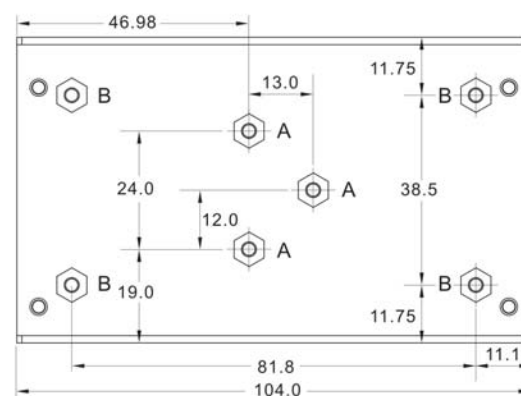
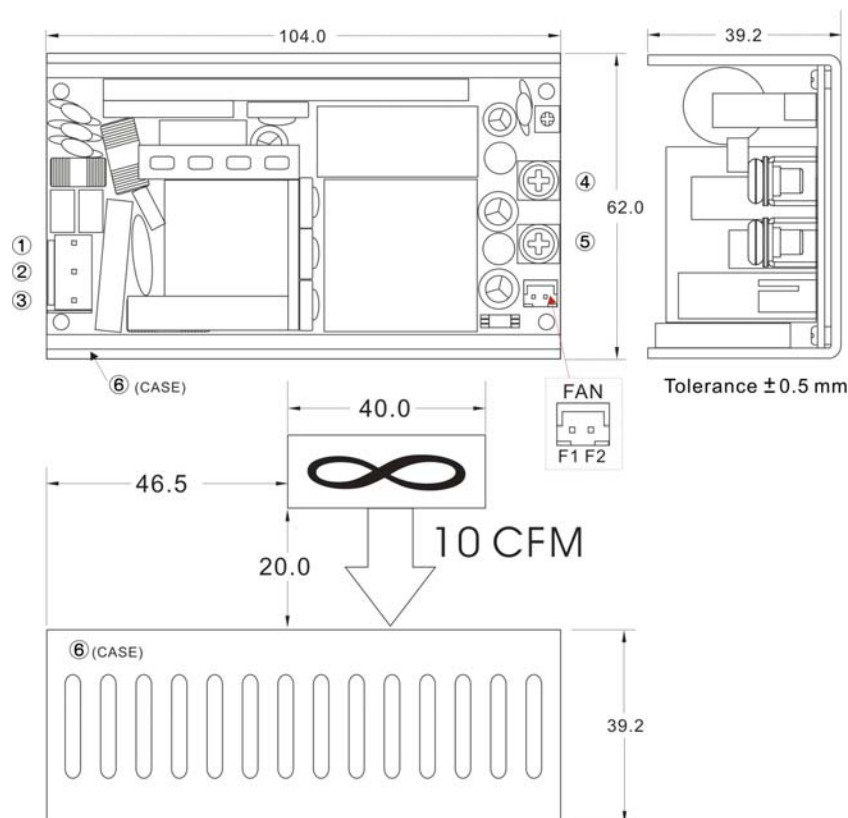


MQF240U SERIES

240 Watts

MECHANICAL DIMENSIONS (Top View)

Standard



A= For fixture to chassis only
A=M3x0.5P
B=For fixture to pcb/chassis only
B=M3x0.5P
Torque:3±0.5 Kgf.cm

Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4	+DC OUT	Terminal : M3.5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.			
5	-DC OUT				
6	PE	—	—	—	—

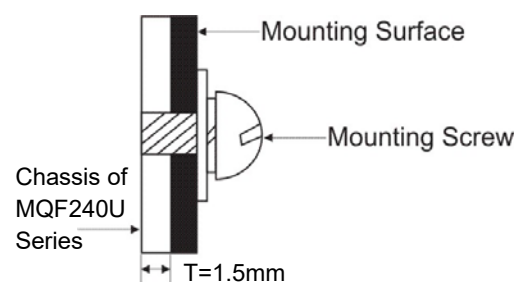
Connector Pin (FAN)

Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
F1	+AUX OUT	CX-H250-02	CX-T2501	XHP-2	SXH-002T-P0.6
F2	-AUX OUT				

ASSEMBLY INSTRUCTIONS

*U Case T=1.5mm

Customer is advised to screw into the threads no more than 1.5mm



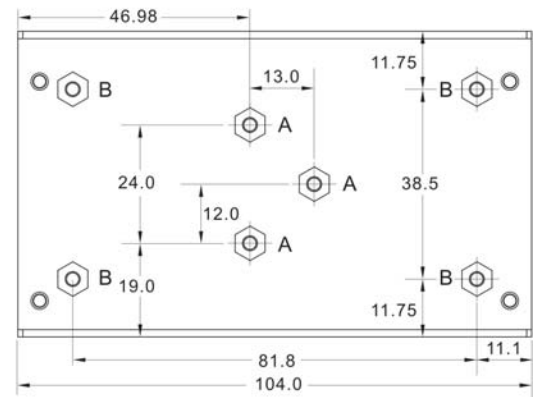
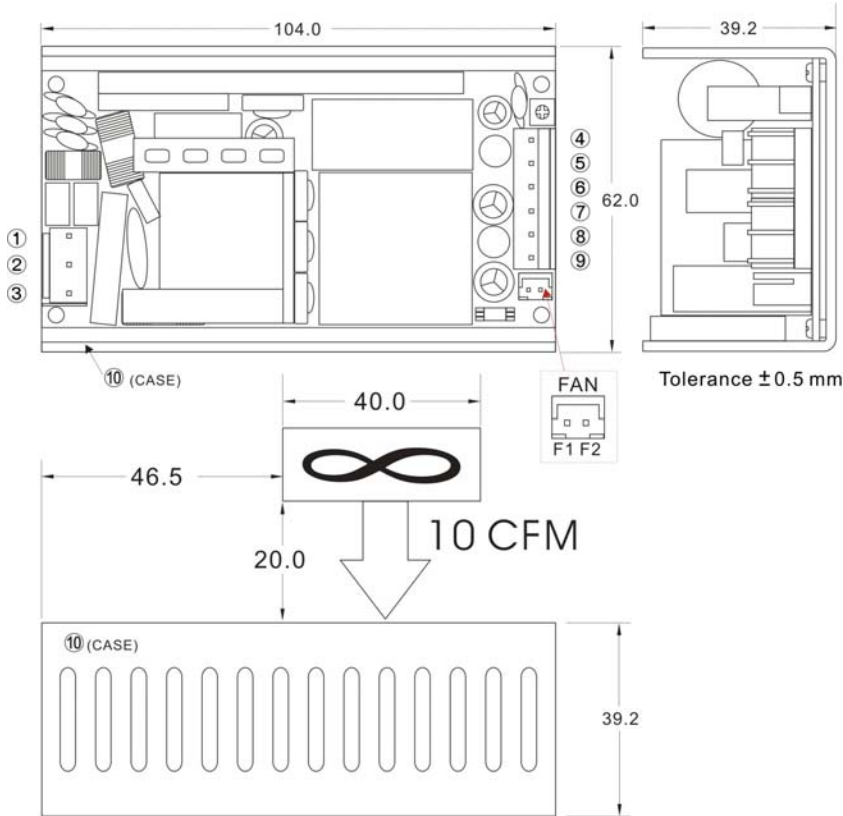
Standard



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

MECHANICAL DIMENSIONS (Top View)

A Type



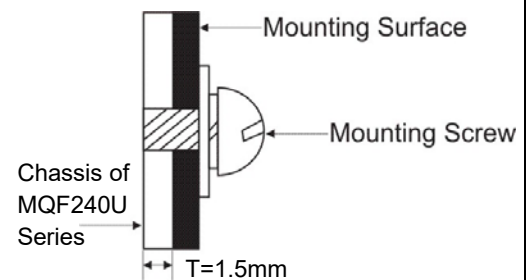
A= For fixture to chassis only
A=M3x0.5P
B=For fixture to pcb/chassis only
B=M3x0.5P
Torque:3±0.5 Kgf.cm

Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)	9396-6	96T series	VHR-6N	SVH-41T-P1.1
4~6	+DC OUT				
7~9	-DC OUT				
10	PE	—	—	—	—

ASSEMBLY INSTRUCTIONS

*U Case T=1.5mm

Customer is advised to screw into the threads no more than 1.5mm



Connector Pin (FAN)

Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
F1	+AUX OUT	CX-H250-02	CX-T2501	XHP-2	SXH-002T-P0.6
F2	-AUX OUT				

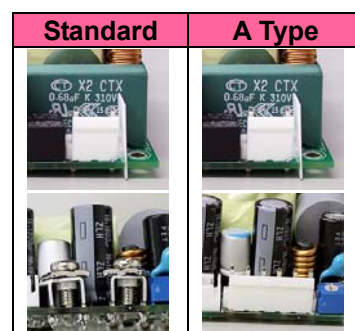
A Type



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

KEY FEATURES

- Enclosed Medical Switching Power Supply
- 4000VAC Input to Output 2MOPP Insulation
- High Efficiency up to 93%
- With P.F.C. Function >0.9
- <0.5W No Load Input Power
- EMI for Both Class I (with PE) and Class II (without PE) Configuration
- Suitable for BF Application with Appropriate System Consideration
- UL / IEC / EN 60601 3.2 Edition & UL / IEC / EN 62368 Safety Approvals
- 3-Year Product Warranty



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.



ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No.		MQF240E-12S	MQF240E-15S	MQF240E-24S	MQF240E-48S
Max Output Wattage (with 10CFM FAN) (W)		240 W			
Input	Voltage (Note 4)	90-264 VAC			
	Frequency (Hz)	47-63 Hz			
	Current (Full load)	< 3.0 A max. (115 VAC) / < 1.5 A max. (230 VAC)			
	Inrush Current (<2ms)	< 45 A max. (115 VAC) / < 90 A max. (230 VAC)			
	Leakage Current	< 0.1mA / 264 VAC (Touch Current)			
	Power Factor	PF>0.9 at Full Load			
Output	Voltage (V.DC.)	12V	15 V	24V	48V
	Voltage Adj Range (V.DC.)	±4% Output Voltage			
	Voltage Accuracy	±2%			
	Current (A) (max.)	20	16	10	5
	Line Regulation	±1%			
	Load Regulation (0-100%)	±1%			
	Minimum Load	0%			
	Maximum Capacitive Load	8000μF	2000μF	3000μF	470μF
	Ripple & Noise (max.) (Note 1)	1% Vout			
	Efficiency (at 230VAC) (Note 6)	92%	92%	92.5%	93%
	Hold-up Time (at 115 VAC) (Note 2)	10 ms min.			
Protection	Over Power Protection	Auto recovery, Hiccup mode			
	Over Voltage Protection	Auto recovery			
	Over Temperature Protection	Auto recovery			
	Short Circuit Protection	Protection level 1 (nominal) : Continuous, Auto recovery Protection level 2 (instantaneous high current) : Latch			
Isolation	Input-Output (Note 5)	4000VAC or 5656VDC			
	Input-PE (Note 5)	2000VAC or 2828VDC			
	Output-PE (Note 5)	1500VAC or 2121VDC			
Environment	Operating Temperature (Note 8)	-30°C...+70°C (with derating)			
	Storage Temperature	-30°C...+85°C			
	Temperature Coefficient	±0.05%/°C			
	Altitude During Operation	5000m			
	Humidity	20~90% RH			
	Atmospheric Pressure	56 kPa to 106 kPa			
	MTBF	>250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)			
	Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)			
	Shock	IEC60068-2-27			

ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

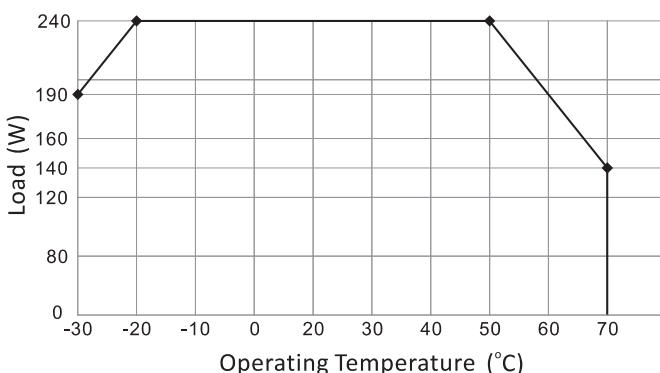
Model No.		MQF240E-12S	MQF240E-15S	MQF240E-24S	MQF240E-48S
Physical	Dimensions (L x W x H)	4.1 x 2.44 x 1.99 Inches (104.0 x 62.0 x 50.5 mm) Tolerance ±0.5 mm			
	Weight	328 g			
Safety	Approval	12S/24S/48S: UL / IEC / EN 60601 3.2 rd Edition (2 x MOPP), UL / IEC / EN 62368-1			
	Approval / Meet	15S: UL / IEC / EN 60601 3.2 rd Edition (2 x MOPP), UL / IEC / EN 62368-1 (meet)			
EMC	Conducted EMI (Note 7)	EN55011 Conducted Class B			
	Radiated EMI (Note 7)	EN55011 Class I class B / Class II class A			
	EMS	EN60601-1-2 4th edition			

NOTE

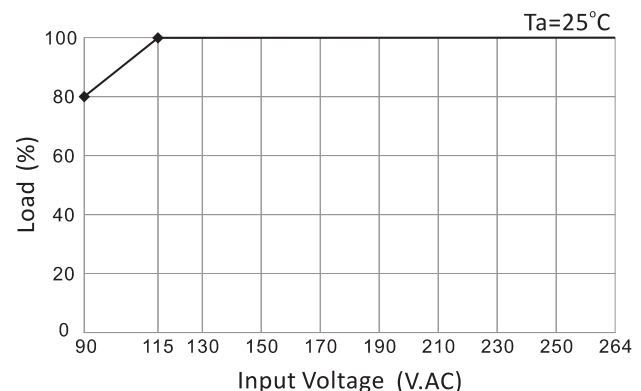
1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Main Vout must be >50% Load, 12V (Aux) / 0.5A.
4. Please check the derating curve for more details.
5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Arch power supply.
6. After 30 minutes of burn-in
7. Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment
8. Due to varying customer application conditions, the product is tested for maximum operating temperature under full load only. For other regulatory requirements, please contact ARCH.
9. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.
(ATTENTION : 2 poles avec fusible sur le neutre. Deconnecter le secteur avant intervention.)

DERATING

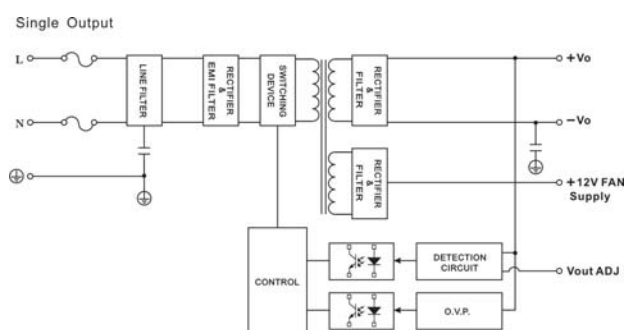
Derating Output Load versus Operating Temperature



Derating Load versus Input Voltage



BLOCK DIAGRAM

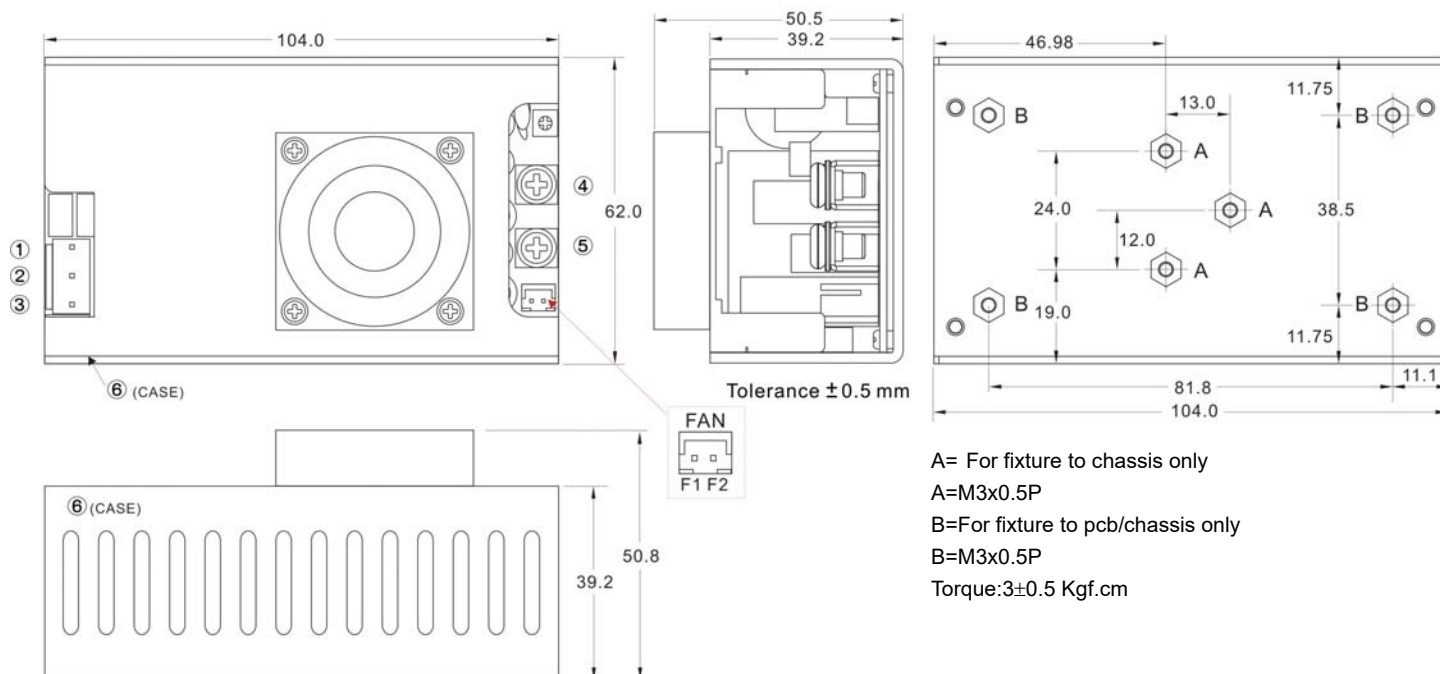


MQF240E SERIES

240 Watts

MECHANICAL DIMENSIONS (Top View)

Standard

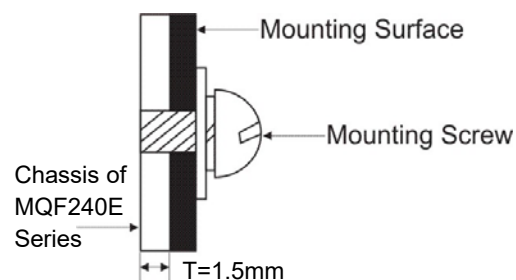


Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4	+DC OUT	Terminal : M3.5 Pan HD screw in 2 positions Torque to 8 lbs-in(90 cNm) max.			
5	-DC OUT				
6	PE	—	—	—	—

ASSEMBLY INSTRUCTIONS

*U Case T=1.5mm

Customer is advised to screw into the threads no more than 1.5mm



Connector Pin (FAN)					
Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
F1	+AUX OUT	CX-H250-02	CX-T2501	XHP-2	SXH-002T-P0.6
F2	-AUX OUT				

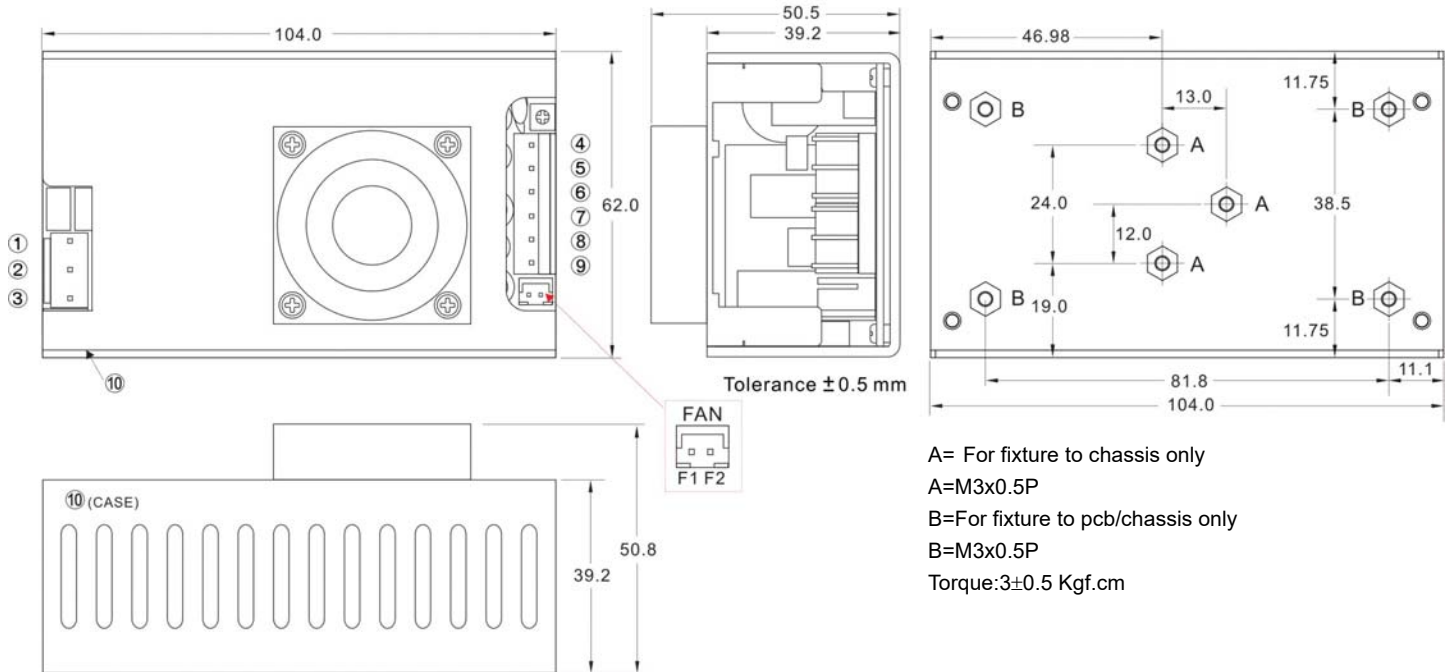
Standard



Please refer to the types of terminal block; the pictures shown are for illustration purpose only, actual product may vary.

MECHANICAL DIMENSIONS (Top View)

A Type

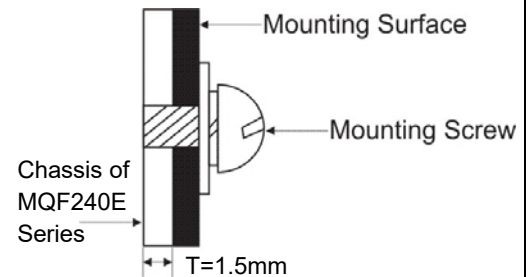


Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
1	AC IN (N)	9396-3	96T series	VHR-3N	SVH-41T-P1.1
2	NO PIN				
3	AC IN (L)				
4~6	+DC OUT	9396-6	96T series	VHR-6N	SVH-41T-P1.1
7~9	-DC OUT				
10	PE	—	—	—	—

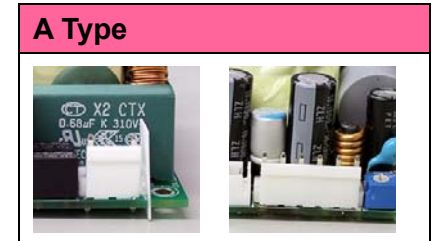
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