

EMC Filter



EN 62368-1 BS EN 62368-1

RoHS



FEATURES

- Ultra wide input voltage range: 0-305VAC / 0-430VDC
- Operating ambient temperature range: -40°C to +85°C
- EMC compliance : IEC/EN61000-4、CISPR32/EN55032
- High surge suppression capability : $\pm 2\text{kV}/4\text{kV}$ 、 $\pm 4\text{kV}/6\text{kV}$
- Insertion loss DM & CM up to 60dB
- Meet with safety standards IEC62368-1
- Operating altitude up to 5000m
- 3 years warranty

FC - L10Wx series and FC-L16Wx series and FC-L25W series is for chassis power source connection type and guide rail type installation of EMC auxiliary device, suitable for applications that are sensitive to noise, such as analog circuits. Adding FC - L10Wx/FC-L16Wx/FC-L25W to the front end of AC/DC chassis power supply can make the power supply products meet the EMC requirements of IEC/EN61000-4 series and CISPR32/EN55032 standards. When used with Mornsun AC/DC chassis power supply, the maximum input voltage of the power supply should not be greater than the maximum working voltage of this product, and the maximum input current should be less than the maximum working current of this product.

Selection Guide

Model*	Operating Voltage(VAC)		Operating Current(A)		Surge Performance	Certification
	Typ. (Range)	Max*	Typ.	Max		
FC-L10W	115/230 (0-305)	310	-	10.0	Line-Line $\pm 2\text{kV}$ Line-PE $\pm 4\text{kV}$	CE/UKCA
FC-L10W2	115/230 (0-305)	310	-	10.0	Line-Line $\pm 4\text{kV}$ Line-PE $\pm 6\text{kV}$	CE/UKCA
FC-L16W	115/230 (0-305)	310	-	16.0	Line-Line $\pm 2\text{kV}$ Line-PE $\pm 4\text{kV}$	CE/UKCA
FC-L16W2	115/230 (0-305)	310	-	16.0	Line-Line $\pm 4\text{kV}$ Line-PE $\pm 6\text{kV}$	CE/UKCA
FC-L25W	115/230 (0-305)	310	-	25.0	Line-Line $\pm 4\text{kV}$ Line-PE $\pm 6\text{kV}$	--

Note: ①*Input voltage should not exceed this value, otherwise permanent irreparable damage may be caused;

②*Product model suffix plus "A4S" for guide rail type package, such as: FC-L10WA4S, Guide rails must be grounded;

General Specifications

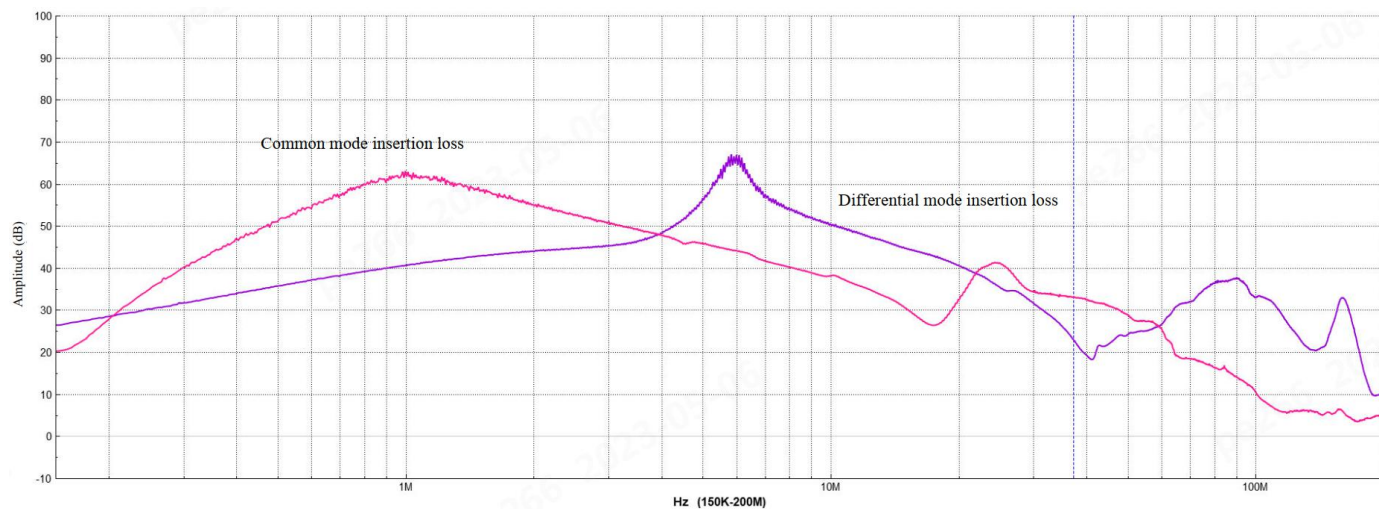
Item	Test Conditions	Min.	Typ.	Max.	Unit
Operating Temperature		-40	--	+85	°C
Storage Temperature		-40	--	+105	
Storage Humidity	No condensation	--	--	95	%RH

Isolation Voltage	FC-L10W/FC-L16W	IN(L) - $\frac{1}{\text{---}}$, IN(N) - $\frac{1}{\text{---}}$, test time 1 minute, leakage current < 5mA	--	--	3000	VAC
	FC-L10W2/FC-L16W2/FC-L25W		--	--	2000	
Insertion Loss (CM/DM)	FC-L10Wx/FC-L16Wx	150kHz~1MHz	20	35	-	dB
		1MHz~10MHz	35	50	-	dB
		10MHz~30MHz	25	30	-	dB
	FC-L25W	150kHz~1MHz	20	25	-	dB
		1MHz~10MHz	30	35	-	dB
		10MHz~30MHz	20	30	-	dB
Altitude	80-110kPa		5000m			
MTBF			MIL-HDBK-217F@25℃≥300,000 h			

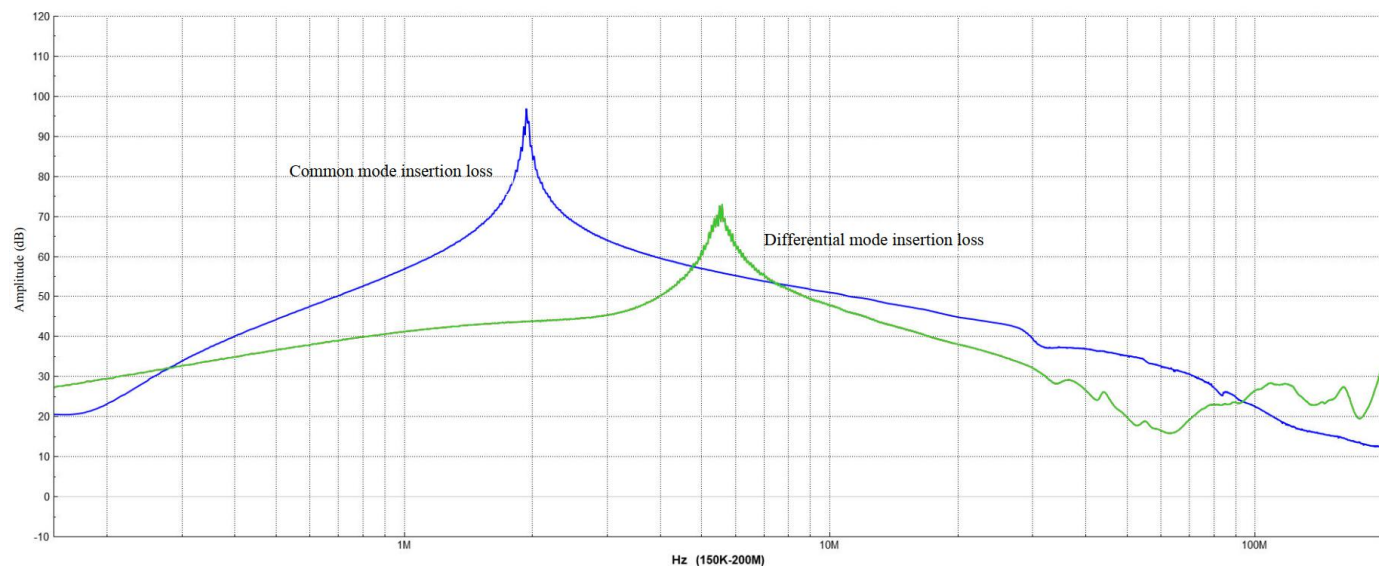
Physical Characteristics

Case Material	Black plastic; Flame-retardant and heat-resistant (UL94 V-0)		
Dimension	FC-L10W	Horizontal packaging	104.00mm x 53.00mm x 42.00 mm
	FC-L16W		
	FC-L25W		
	FC-L10WA4S	A4S wiring type package	108.00mm x 53.00mm x 49.50 mm
	FC-L16WA4S		
	FC-L25WA4S		
Weight	FC-L10W	Horizontal packaging	156g(Typ.)
	FC-L16W	Horizontal packaging	172g(Typ.)
	FC-L25W	Horizontal packaging	205g(Typ.)
	FC-L10WA4S	A4S wiring type package	208g(Typ.)
	FC-L16WA4S	A4S wiring type package	224g(Typ.)
	FC-L25WA4S	A4S wiring type package	257g(Typ.)
	FC-L10W2	Horizontal packaging	163g(Typ.)
	FC-L16W2	Horizontal packaging	179g(Typ.)
	FC-L10W2A4S	A4S wiring type package	215g(Typ.)
	FC-L16W2A4S	A4S wiring type package	230g(Typ.)
Cooling Method	Free air convection		

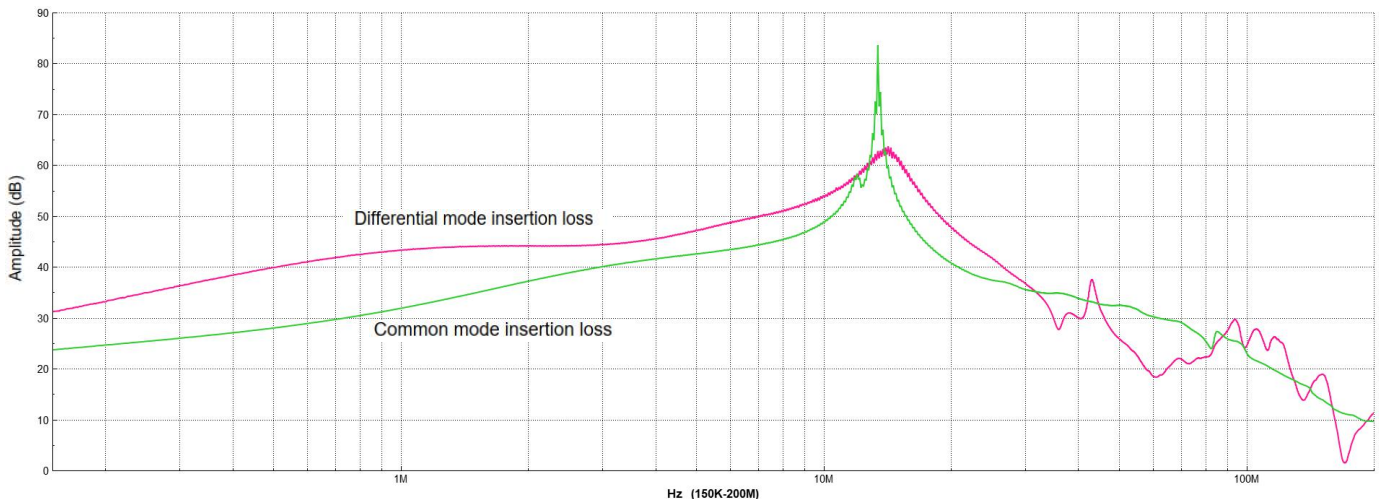
FC-L10Wx Insertion Loss Specifications



FC-L16Wx Insertion Loss Specifications



FC-L25Wx Insertion Loss Specifications

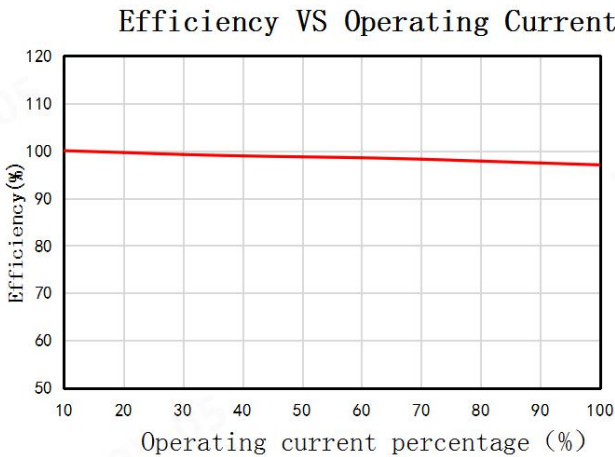
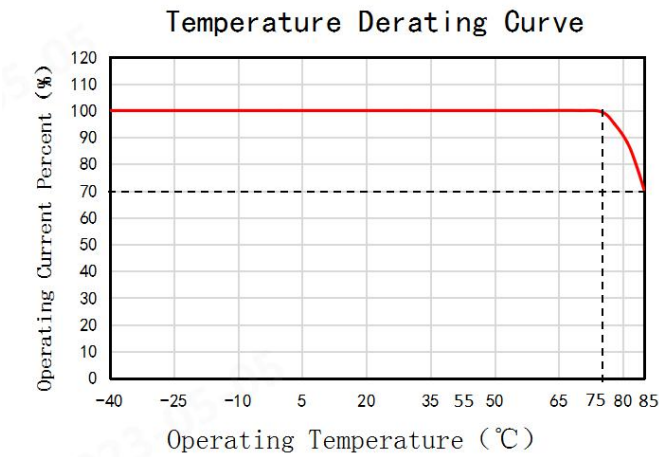


EMC Characteristics

EMI	CE		CISPR32/EN55032	CLASS B	
	RE	FC-L25W	CISPR32/EN55032	CLASS A	
EMS	ESD		IEC/EN61000-4-2	Contact ±8kV Air ±15kV	perf. Criteria A
	RS		IEC/EN61000-4-3	10V/m	perf. Criteria A
	EFT	FC-L10Wx (A4S)	IEC/EN61000-4-4	5KHz 5/50ns ±4KV	perf. Criteria A
		FC-L16Wx (A4S)		5KHz、100KHz 5/50ns ±4KV	perf. Criteria A
		FC-L25W (A4S)			
	Surge	FC-L10W (A4S)	IEC61000-4-5	Line-Line ±2kV	perf. Criteria B
		FC-L16W (A4S)		Line-PE ±4kV	perf. Criteria B
		FC-L10W2 (A4S)		Line-Line ±4kV	perf. Criteria A
		FC-L16W2 (A4S)		Line-PE ±6kV	perf. Criteria B
		FC-L25W (A4S)			perf. Criteria A
	CS		IEC61000-4-6	10V r.m.s	perf. Criteria A
	PFMF		IEC61000-4-8	50/60Hz 30A/m	perf. Criteria A

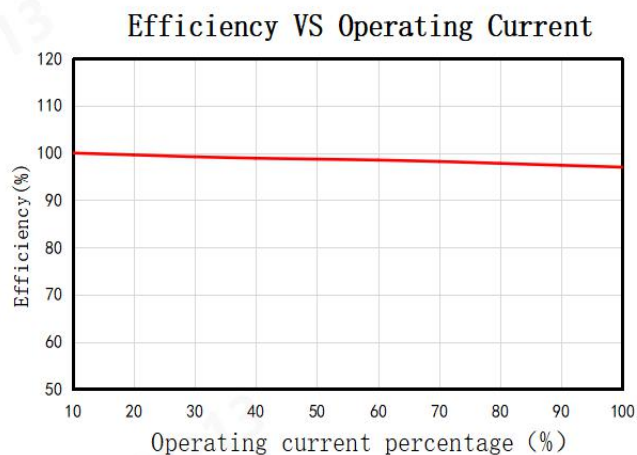
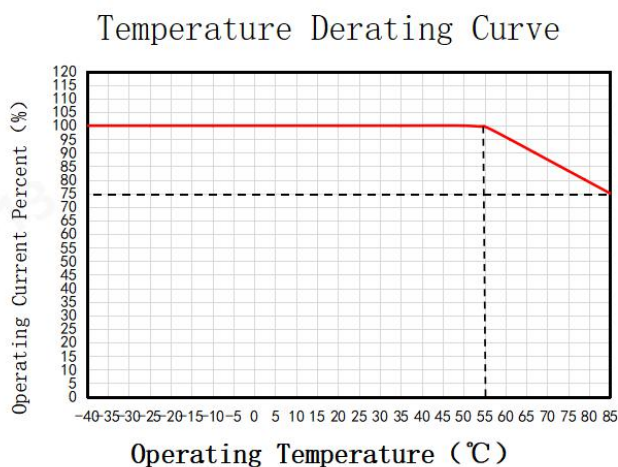
Note: Matching FC-L10Wx to the front end of the LM600-12Bxx、LM600-20Bx series power supply, FC-L16Wx to the front end of the LM600-20Bxx、LMF1500-20Bxx series power supply and FC-L25W to the front end of the LMF2000-20Bxx series power supply can make the power module meet above EMC characteristics.

FC-L10Wx & FC-L16Wx Product Typical Curve



Note: This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

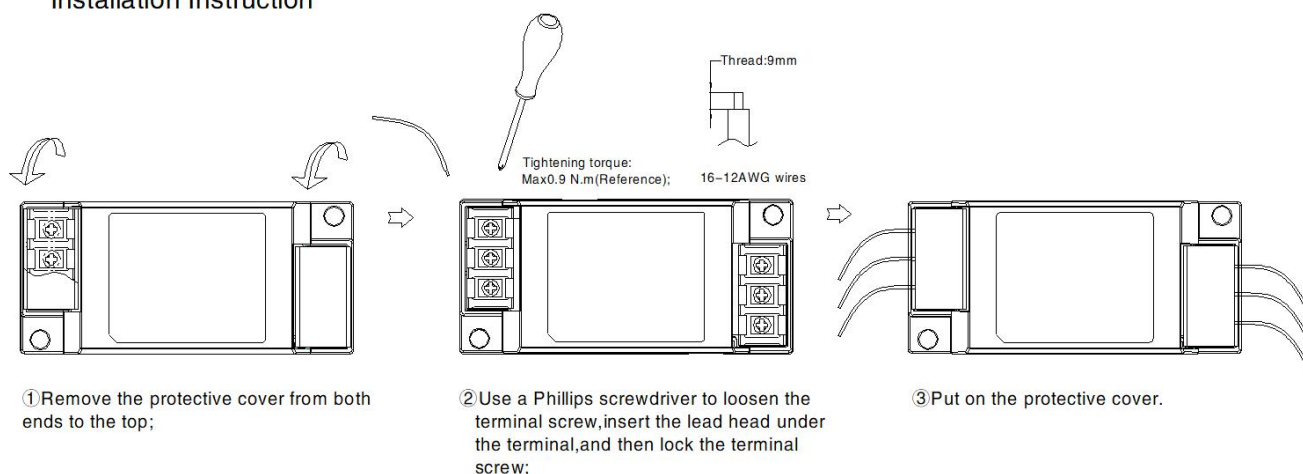
FC-L25W Product Typical Curve



Note: This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

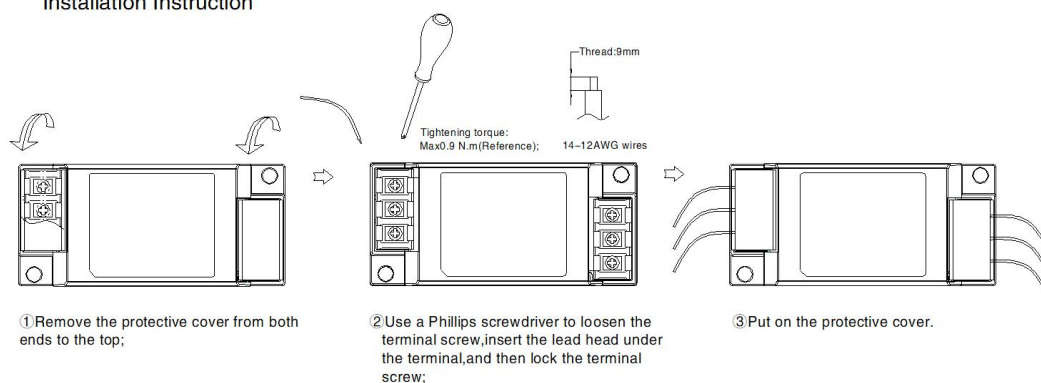
FC-L10Wx & FC-L16Wx Series Installation Instruction

Installation Instruction



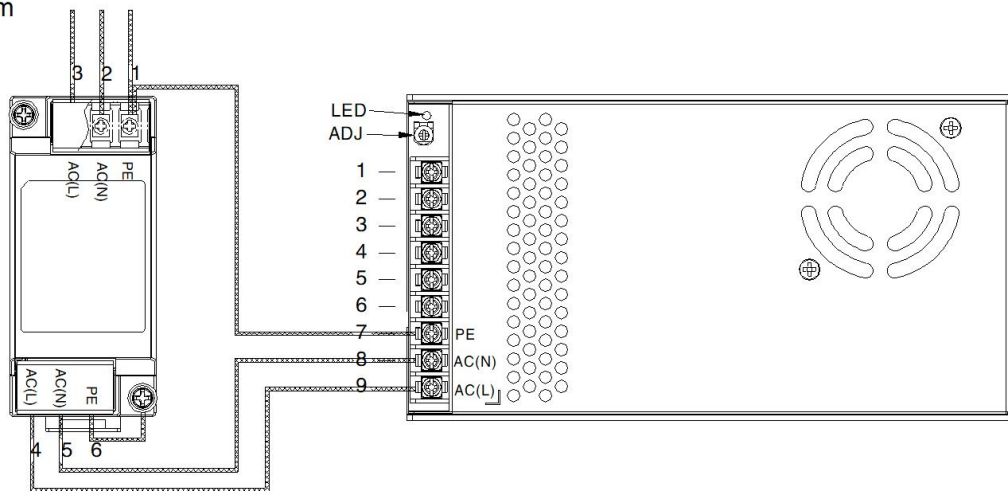
FC-L25W Series Installation Instruction

Installation Instruction



FC-L10Wx Series Wiring Schematic Diagram

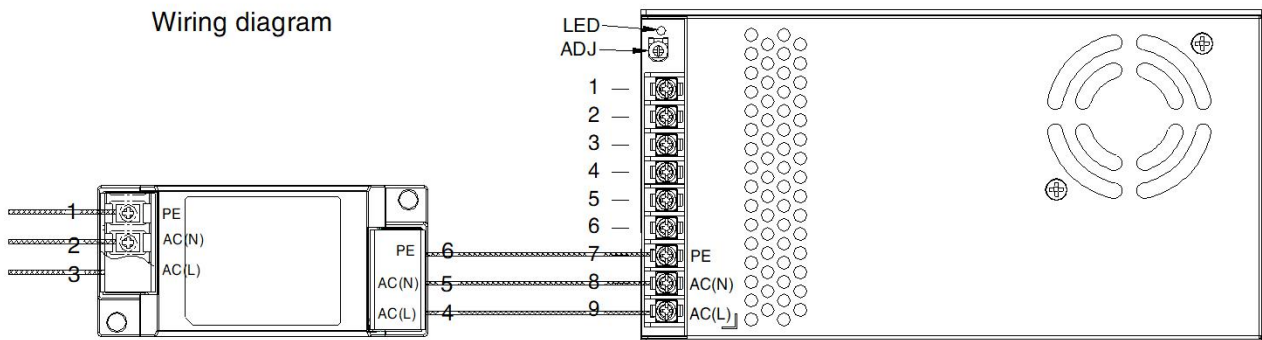
Wiring diagram



Note: *The U-shaped ground lug M4 is recommended for PE wire head connection

FC-L16Wx Series Wiring Schematic Diagram

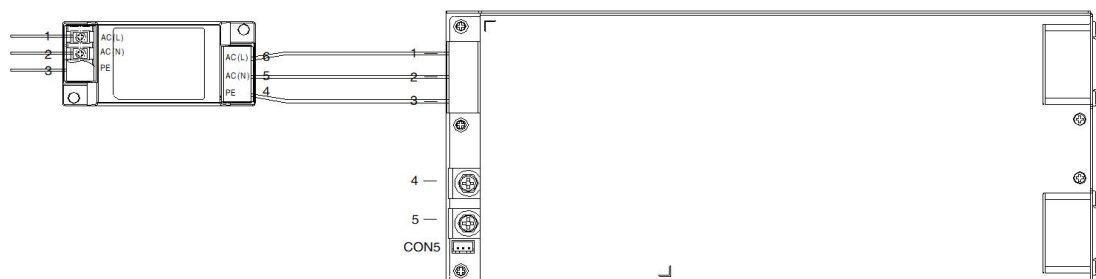
Wiring diagram



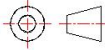
Note: * The U-shaped ground lug M4 is recommended for PE wire head connection

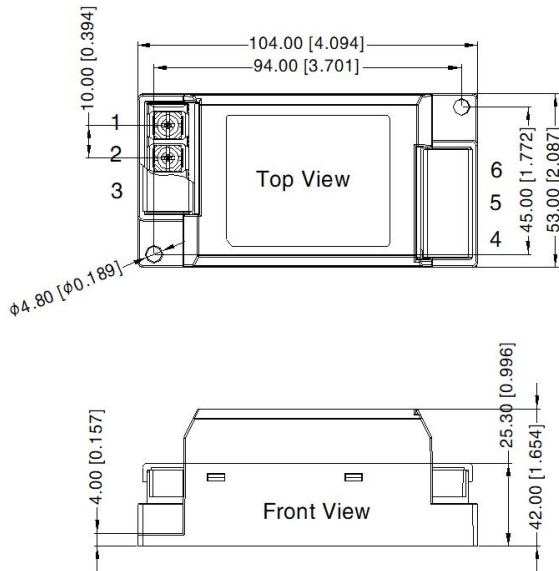
FC-L25W Series Wiring Schematic Diagram



Wiring diagram



FC-L10Wx & FC-L16Wx Dimensions and Recommended Layout


THIRD ANGLE PROJECTION 

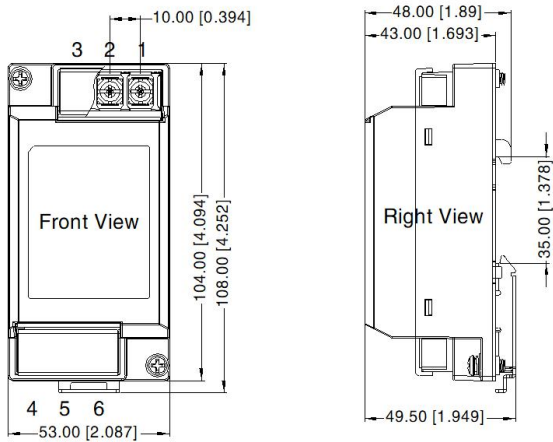




Pin-Out	
Pin	Mark
1	
2	IN(N)
3	IN(L)
4	OUT(L)
5	OUT(N)
6	

Note:
Unit: mm[inch]
Wire range: 16–12AWG
Tightening torque: Max 0.9 N.m
General tolerances: $\pm 1.00[\pm 0.039]$

FC-L10WxA4S & FC-L16WxA4S Dimensions and Recommended Layout

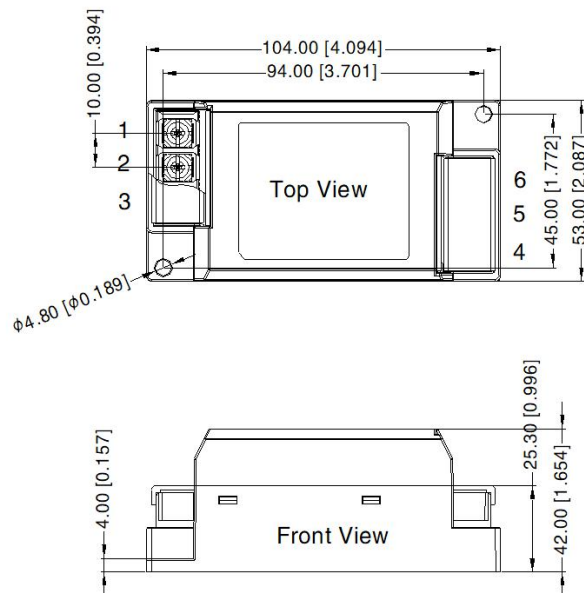
THIRD ANGLE PROJECTION 



Pin-Out	
Pin	Mark
1	
2	IN(N)
3	IN(L)
4	OUT(L)
5	OUT(N)
6	

Note:
Unit: mm[inch]
Wire range: 16–12AWG
Tightening torque: Max 0.9 N.m
Mounting rail: TS35
General tolerances: $\pm 1.00[\pm 0.039]$

FC-L25W Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 

Pin-Out	
Pin	Mark
1	IN(L)
2	IN(N)
3	⏏
4	⏏
5	OUT(N)
6	OUT(L)

Note:

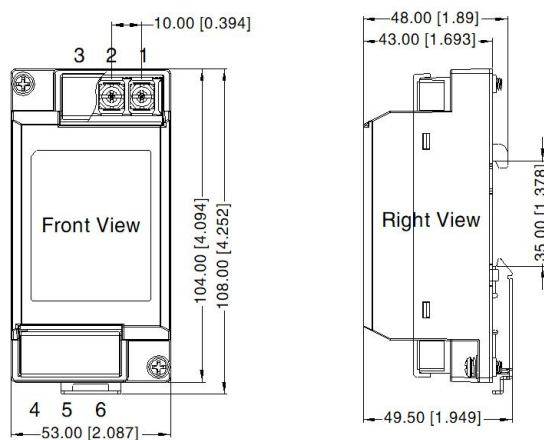
Unit: mm[inch]

Wire range: 14–12AWG

Tightening torque: Max 0.9 N.m

General tolerances: ± 1.00 [± 0.039]

FC-L25WA4S Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 

Pin-Out	
Pin	Mark
1	IN(L)
2	IN(N)
3	⏏
4	⏏
5	OUT(N)
6	OUT(L)

Note:

Unit: mm[inch]

Wire range: 14–12AWG

Tightening torque: Max 0.9 N.m

Mounting rail: TS35

General tolerances: ± 1.00 [± 0.039]

Note:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58240086;
2. Unless otherwise specified, data in this datasheet should be tested under the conditions of Ta=25°C, humidity<75%RH with nominal input voltage and rated load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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