

EMC Filter



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 : ±2kV/4kV 、 ±4kV/6kV
- Insertion loss DM & CM up to 60dB
- Compliance with safety standards IEC62368-1
- Operating altitude up to 5000m
- 3 years warranty

FC - L10Wx series and FC-L16Wx 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 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 ±2kV Line-PE ±4kV | CE/UKCA |
| FC-L10W2 | 115/230 (0-305) | 310 | - | 10.0 | Line-Line ±4kV Line-PE ±6kV | CE/UKCA |
| FC-L16W | 115/230 (0-305) | 310 | - | 16.0 | Line-Line ±2kV Line-PE ±4kV | -- |
| FC-L16W2 | 115/230 (0-305) | 310 | - | 16.0 | Line-Line ±4kV Line-PE ±6kV | -- |

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;

General Specifications

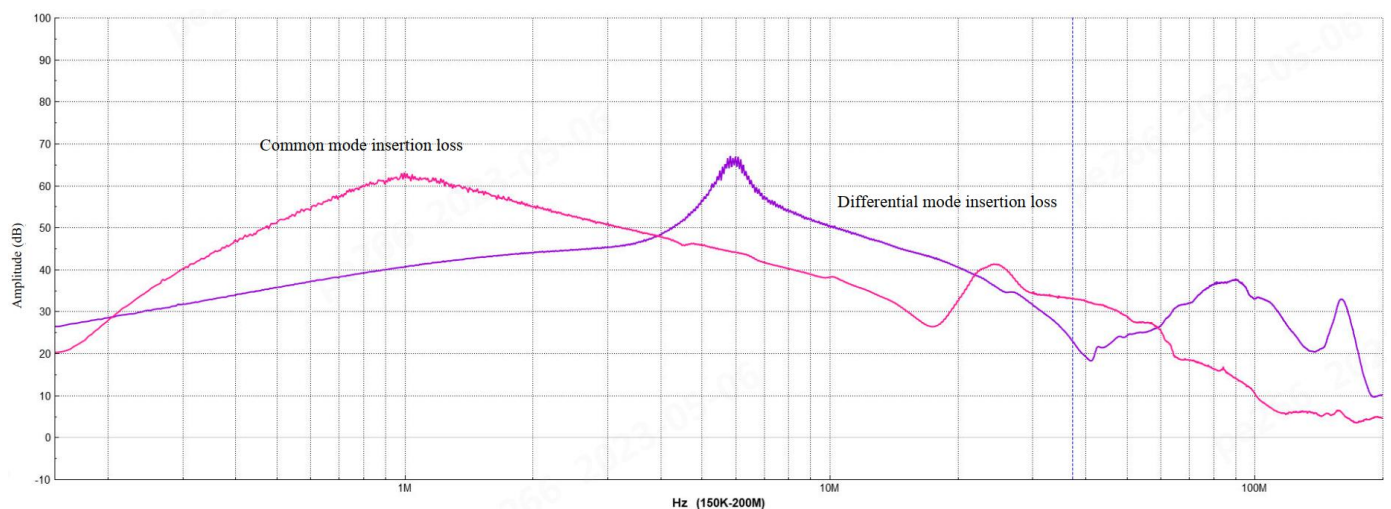
| Item | Test Conditions | Min. | Typ. | Max. | Unit |
|-----------------------|---|------|------|------|------|
| Operating Temperature | | -40 | -- | +85 | °C |
| Storage Temperature | | -40 | -- | +105 | |
| Storage Humidity | No condensation | -- | -- | 95 | %RH |
| Isolation Voltage | FC-L10W/FC-L16W | 3000 | -- | -- | VAC |
| | FC-L10W2/FC-L16W2 | | | | |
| | IN(L) - \perp , IN(N) - \perp , test time 1 minute, leakage current < 5mA | 2000 | | | |

| | | | | | |
|---------------------------|-------------|--------------------------------|----|---|----|
| Insertion Loss (CM/DM) | 150kHz~1MHz | 20 | 35 | - | dB |
| | 1MHz~10MHz | 35 | 50 | - | dB |
| | 10MHz~30MHz | 25 | 30 | - | dB |
| Altitude | 80-110kPa | 5000m | | | |
| MTBF | | MIL-HDBK-217F@25°C ≥ 300,000 h | | | |

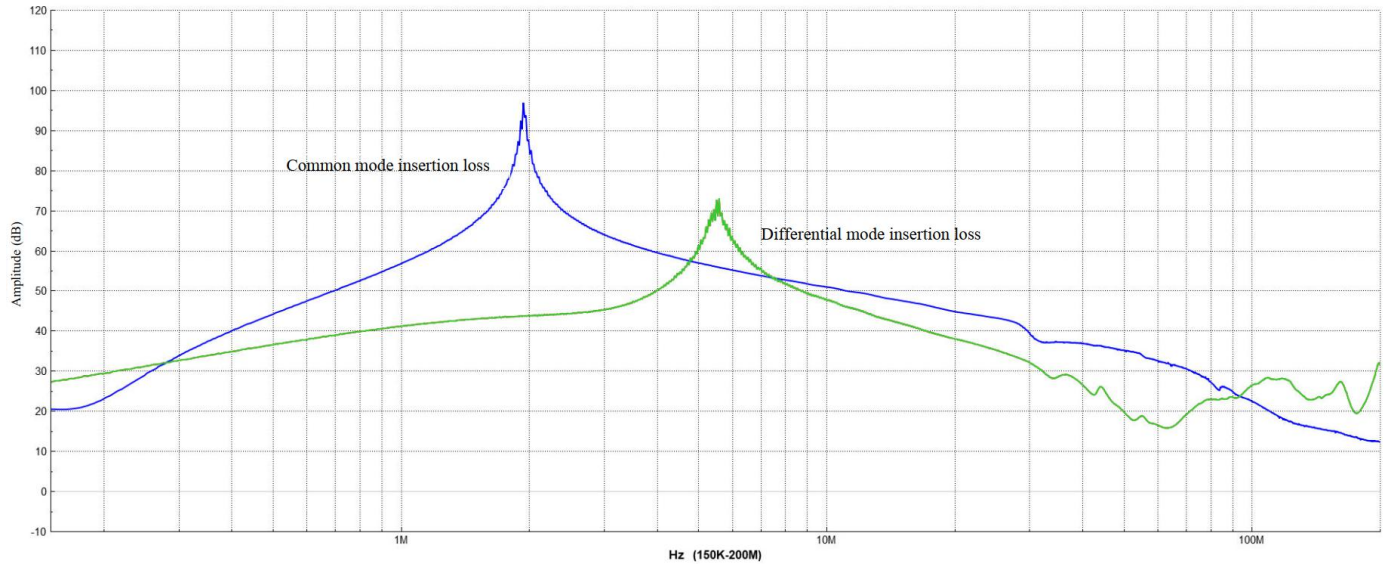
Physical Characteristics

| | | | | | |
|----------------|--|-------------------------|---------------------------|--|--|
| Case Material | Black plastic; Flame-retardant and heat-resistant (UL94 V-0) | | | | |
| Dimension | FC-L10W | Horizontal packaging | 104.00 x 53.00 x 42.00 mm | | |
| | FC-L16W | | | | |
| | FC-L10WA4S | A4S wiring type package | 108.00 x 53.00 x 49.50 mm | | |
| | FC-L16WA4S | | | | |
| Weight | FC-L10W | Horizontal packaging | 156g(Typ.) | | |
| | FC-L16W | Horizontal packaging | 172g(Typ.) | | |
| | FC-L10WA4S | A4S wiring type package | 208g(Typ.) | | |
| | FC-L16WA4S | A4S wiring type package | 224g(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

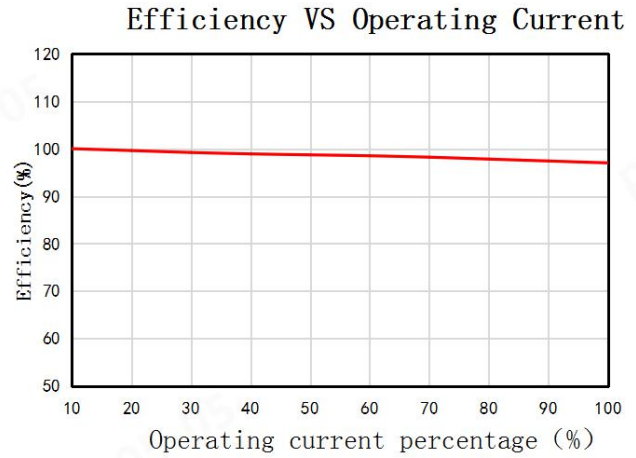
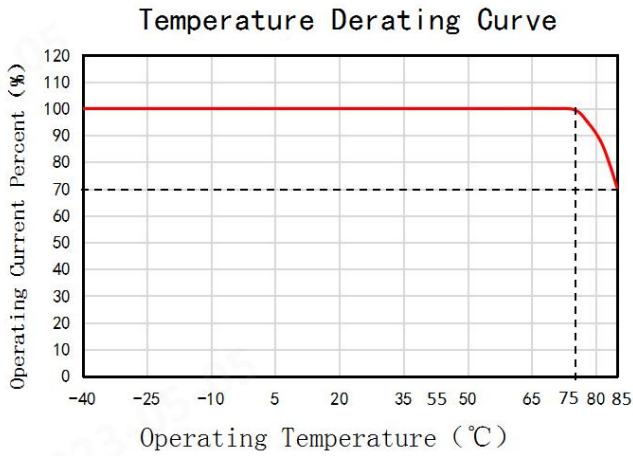


EMC Characteristics

| EMI | CE | CISPR32/EN55032 | CLASS B | | |
|------|--------------|-----------------|---------------------------|------------------|------------------|
| EMS | ESD | IEC/EN61000-4-2 | Contact ±8kV Air ±15kV | perf. Criteria A | |
| | RS | IEC/EN61000-4-3 | 10V/m | perf. Criteria A | |
| | EFT | IEC/EN61000-4-4 | 5KHz 5/50ns ±4KV | perf. Criteria A | |
| | 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 |
| | CS | IEC61000-4-6 | 10V r.m.s | perf. Criteria A | |
| PFMF | IEC61000-4-8 | 50/60Hz 30A/m | perf. Criteria A | | |

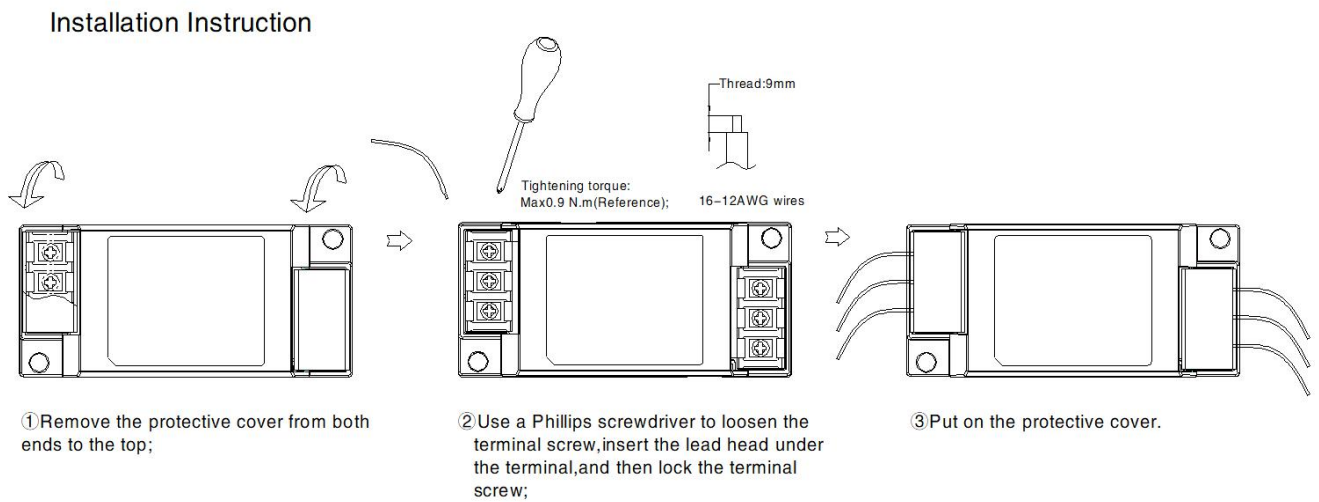
Note: Matching FC-L10Wx to the front end of the LM600-12Bxx, LM600-20Bx series power supply and FC-L16Wx to the front end of the LM600-20Bxx, LMF1500-20Bxx series power supply can make the power module meet above EMC characteristics.

FC-L10Wx & FC-L16Wx Product Typical Curve



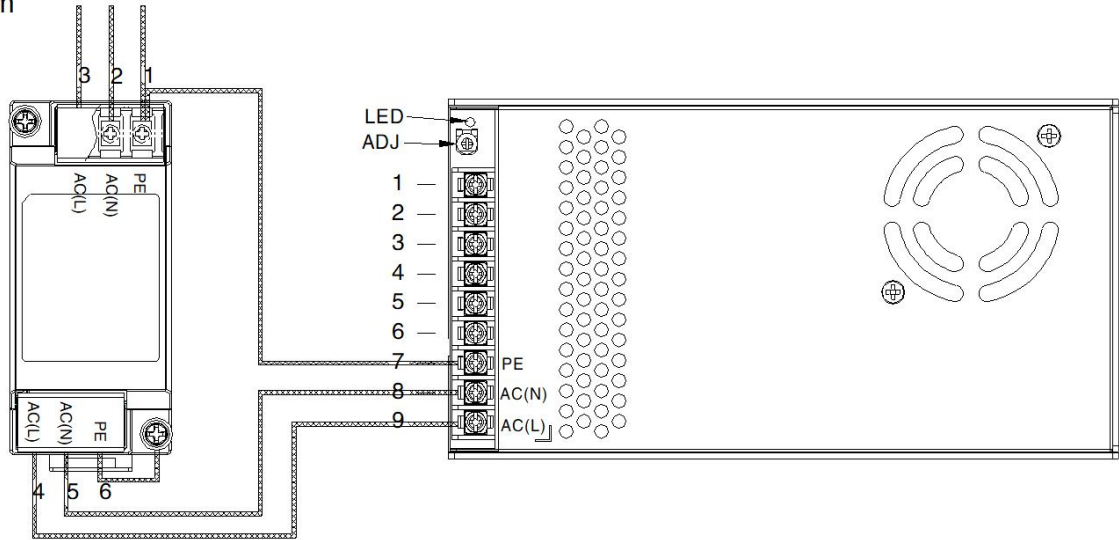
Note: This product is suitable for applications using natural air cooling; for applications in closed environment please consult factory or one of our FAE.

FC-L10Wx & FC-L16Wx Installation Instruction



FC-L10WxA4S Wiring Schematic Diagram

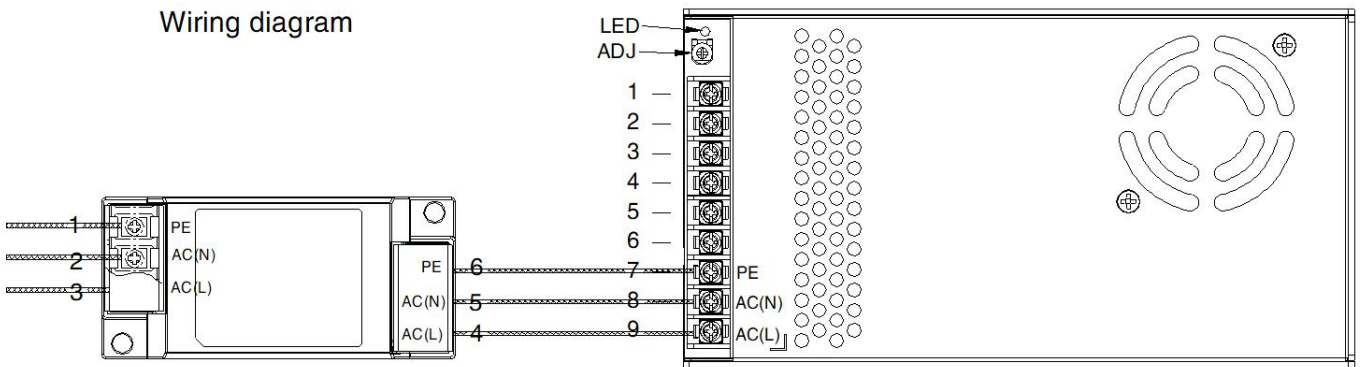
Wiring diagram



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

FC-L16Wx Wiring Schematic Diagram

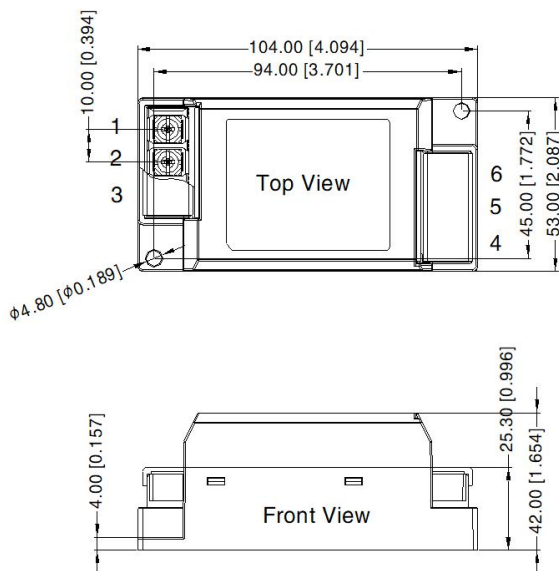
Wiring diagram





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

FC-L10Wx & FC-L16Wx Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 

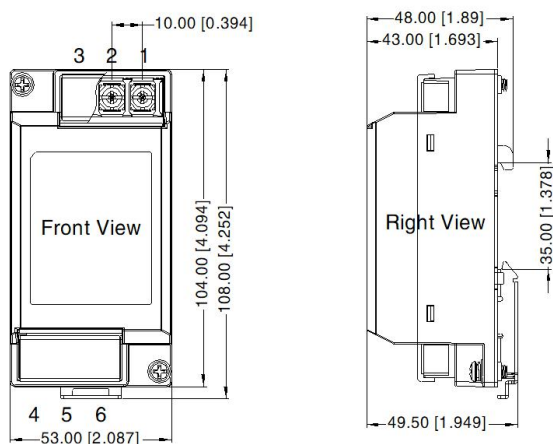




| Pin-Out | |
|---------|---|
| Pin | Mark |
| 1 |  |
| 2 | IN(N) |
| 3 | IN(L) |
| 4 | OUT(L) |
| 5 | OUT(N) |
| 6 |  |

Note:
 Unit: mm[inch]
 Wire range: 16-12AWG
 Tightening torque: Max 0.9 N.m
 General tolerances: ± 1.00 [± 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: ± 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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