

## 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 up to 75dB & CM up to 50dB
- Compliance with safety standards IEC62368/IEC60939

The filter is suitable for applications that are sensitive to noise, such as analog circuits. Adding FC-L03Wx and FC-L06Wx 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              |
|----------|------------------------|------|----------------------|-----|--------------------------------|
|          | Typ.<br>(Range)        | Max* | Typ.                 | Max |                                |
| FC-L03W  | 230<br>(0-305)         | 310  | -                    | 3.0 | Line-Line ±2kV<br>Line-PE ±4kV |
| FC-L03W2 | 230<br>(0-305)         | 310  | -                    | 3.0 | Line-Line ±4kV<br>Line-PE ±6kV |
| FC-L06W  | 230<br>(0-305)         | 310  | -                    | 6.0 | Line-Line ±2kV<br>Line-PE ±4kV |
| FC-L06W2 | 230<br>(0-305)         | 310  | -                    | 6.0 | Line-Line ±4kV<br>Line-PE ±6kV |

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

②\*Product model suffix plus "A2S" for metal plate wiring type package, suffix plus "A4S" for guide rail type package, such as: FC-L06WA4S;

## General Specifications

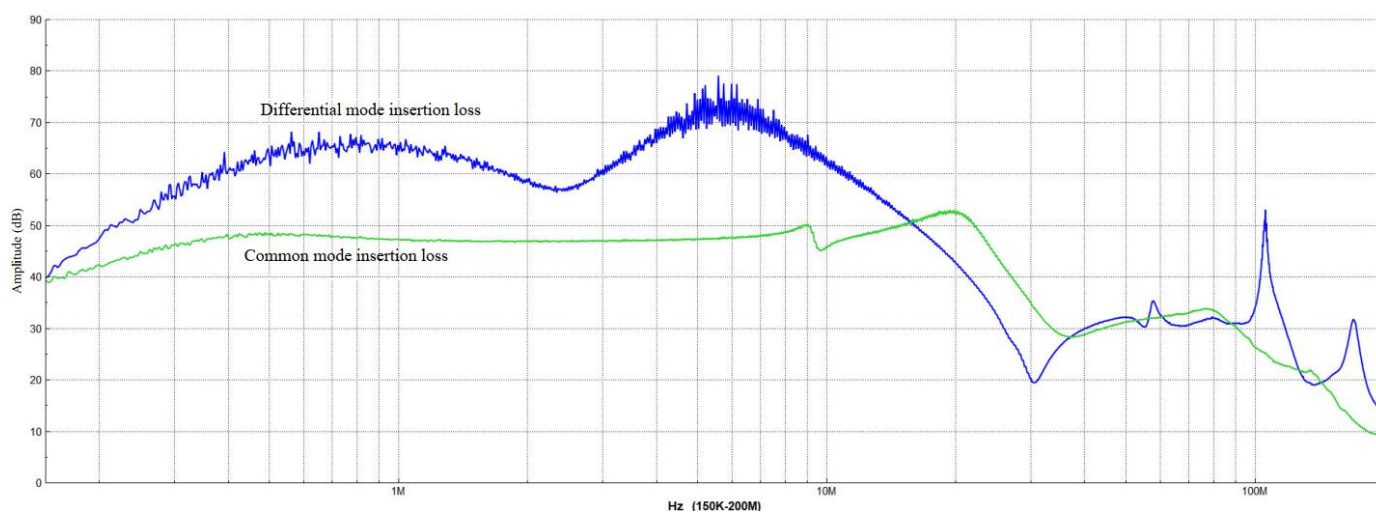
| Item                  | Test Conditions                                                     | Min. | Typ. | Max. | Unit |
|-----------------------|---------------------------------------------------------------------|------|------|------|------|
| Operating Temperature |                                                                     | -40  | --   | +85  | °C   |
| Storage Temperature   |                                                                     | -40  | --   | +105 |      |
| Storage Humidity      |                                                                     | --   | --   | 95   | %RH  |
| Isolation Voltage     | IN(L) ~ PE, IN(N) ~ PE, test time 1 minute, leakage current < 3.5mA | 2000 | --   | --   | VAC  |
| Insertion Loss        | 150kHz~1MHz                                                         | 25   | 30   | -    | dB   |

|                           |             |                                       |    |   |    |
|---------------------------|-------------|---------------------------------------|----|---|----|
| (CM/DM)                   | 1MHz~10MHz  | 30                                    | 35 | - | dB |
|                           | 10MHz~30MHz | 18                                    | 20 | - | dB |
| MTBF                      |             | MIL-HDBK-217F@25℃≥1000,000 h          |    |   |    |
| Impact and Vibration Test |             | 10-55Hz, 5G, 30 Min. along X, Y and Z |    |   |    |
| Altitude                  | 80-110kPa   | ≤5000m                                |    |   |    |

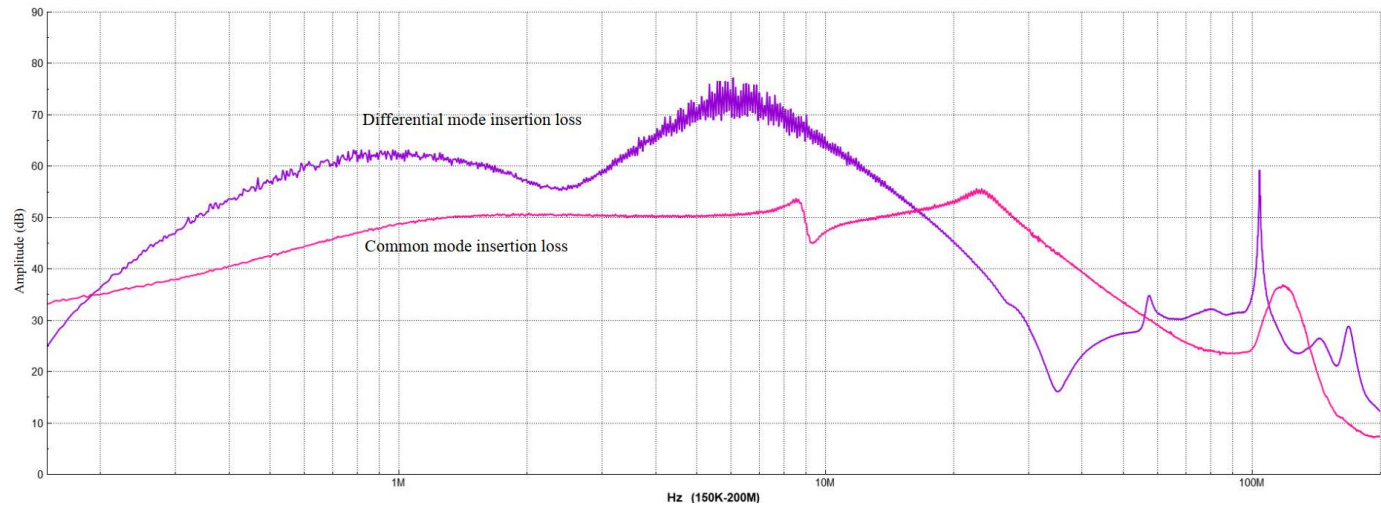
## physical characteristics

|                |                                                              |                         |                     |
|----------------|--------------------------------------------------------------|-------------------------|---------------------|
| Case Material  | Black plastic; flame-retardant and heat-resistant (UL94 V-0) |                         |                     |
| Dimension      | FC-L03Wx<br>FC-L06Wx                                         | Horizontal packaging    | 85.00*39.00*28.90mm |
|                |                                                              | A2S wiring type package | 85.00*39.00*29.90mm |
|                |                                                              | A4S wiring type package | 89.00*39.00*36.40mm |
| Weight         | FC-L03W                                                      | Horizontal packaging    | 68g(Typ.)           |
|                |                                                              | A2S wiring type package | 94(Typ.)            |
|                |                                                              | A4S wiring type package | 105(Typ.)           |
|                | FC-L03W2                                                     | Horizontal packaging    | 74(Typ.)            |
|                |                                                              | A2S wiring type package | 100(Typ.)           |
|                |                                                              | A4S wiring type package | 111(Typ.)           |
|                | FC-L06W                                                      | Horizontal packaging    | 72(Typ.)            |
|                |                                                              | A2S wiring type package | 98(Typ.)            |
|                |                                                              | A4S wiring type package | 109(Typ.)           |
|                | FC-L06W2                                                     | Horizontal packaging    | 78(Typ.)            |
|                |                                                              | A2S wiring type package | 104(Typ.)           |
|                |                                                              | A4S wiring type package | 115(Typ.)           |
| Cooling Method | Free air convection                                          |                         |                     |

## FC-L03Wx Insertion Loss Specifications

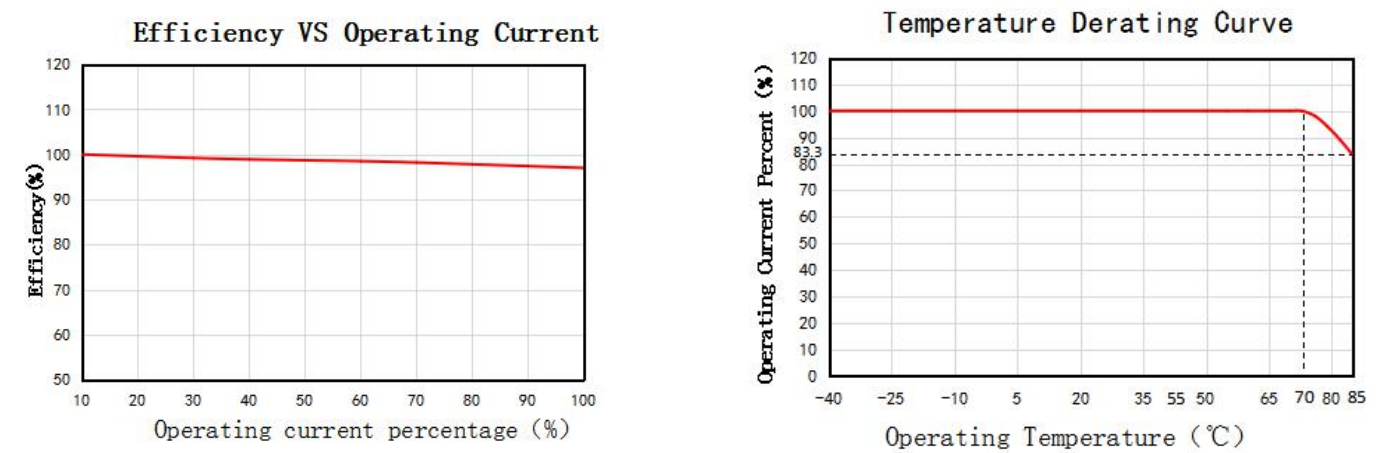


FC-L06Wx Insertion Loss Specifications



| EMC characteristics                                                                                                                                    |                    |          |                 |  |                                     |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|-----------------|--|-------------------------------------|------------------|
| EMI                                                                                                                                                    | CE                 |          | CISPR32/EN55032 |  | CLASS B                             |                  |
|                                                                                                                                                        | RE                 |          | CISPR32/EN55032 |  | CLASS B                             |                  |
| EMS                                                                                                                                                    | ESD                |          | IEC/EN61000-4-2 |  | Contact    ±8kV<br>Air        ±15kV | perf. Criteria A |
|                                                                                                                                                        | RS                 |          | IEC/EN61000-4-3 |  | 10V/m                               | perf. Criteria A |
|                                                                                                                                                        | EFT                |          | IEC/EN61000-4-4 |  | ±4kV                                | 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 |
|                                                                                                                                                        | Surge              | FC-L03W  | IEC61000-4-5    |  | Line-Line    ±2kV                   | perf. Criteria A |
|                                                                                                                                                        |                    | FC-L06W  |                 |  | Line-PE       ±4kV                  |                  |
|                                                                                                                                                        |                    | FC-L03W2 |                 |  | Line-Line    ±4kV                   | perf. Criteria B |
| FC-L06W2                                                                                                                                               | Line-PE       ±6kV |          |                 |  |                                     |                  |
| Note: Matching FC-L03Wx/FC-L06Wx to the front end of the LM200/350-10Bxx series power supply can make the power module meet above EMC characteristics. |                    |          |                 |  |                                     |                  |

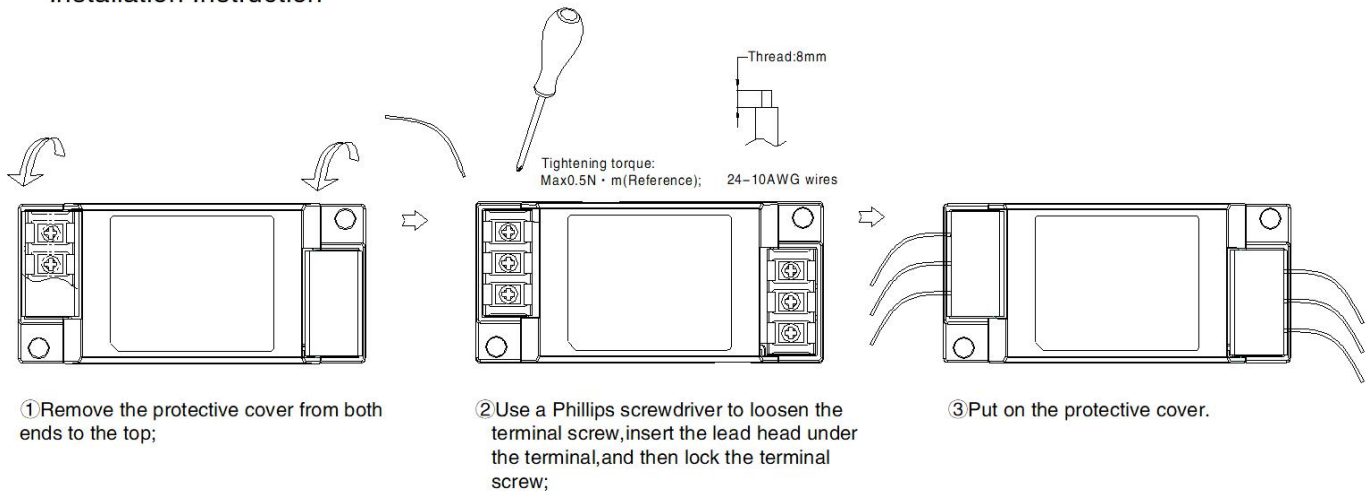
Product Typical Curve



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

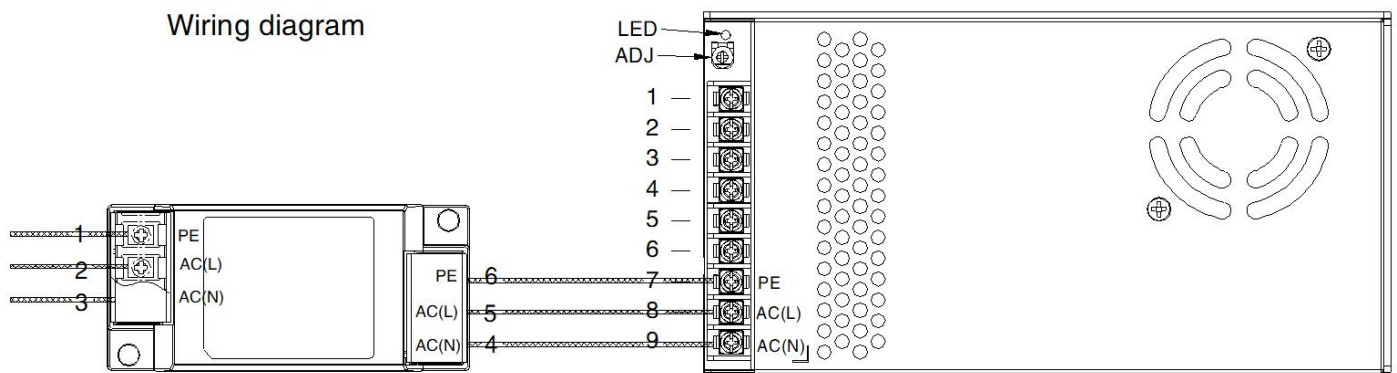
### FC-L03Wx & FC-L06Wx Installation Instruction

#### Installation Instruction

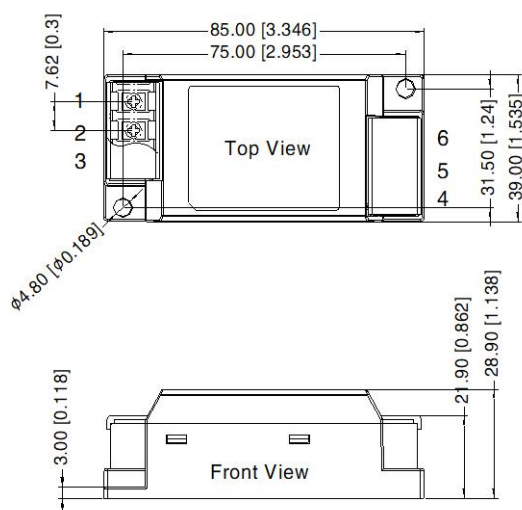
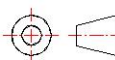


### FC-L03Wx & FC-L06Wx Wiring Schematic Diagram

#### Wiring diagram



## FC-L03WX &amp; FC-L06WX Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 

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

Note:

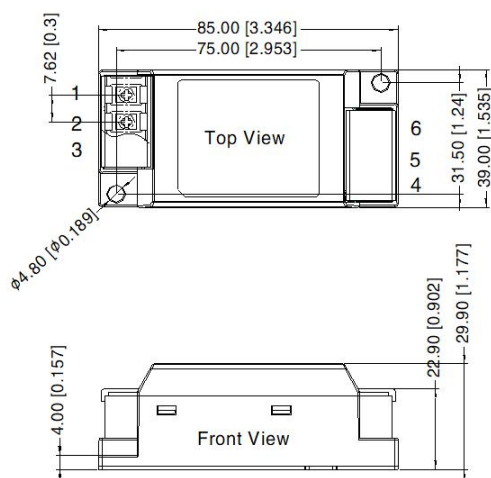
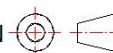
Unit: mm[inch]

Wire range: 22-14 AWG

Tightening torque: Max 0.5 N · m

General tolerances:  $\pm 1.00[\pm 0.039]$ 

## FC-L03WXA2S &amp; FC-L06WXA2S Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 

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

Note:

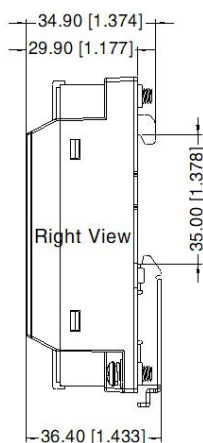
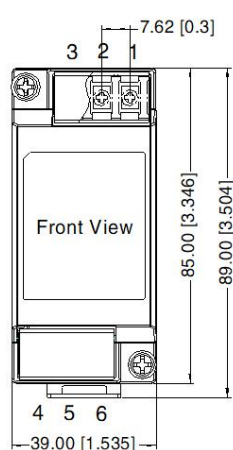
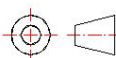
Unit: mm[inch]

Wire range: 22-14 AWG

Tightening torque: Max 0.5 N · m

General tolerances:  $\pm 1.00[\pm 0.039]$

## FC-L03WXA4S &amp; FC-L06WXA4S Dimensions and Recommended Layout

THIRD ANGLE PROJECTION 

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

Note:

Unit: mm[inch]

Wire range: 22-14 AWG

Tightening torque: Max 0.5 N · m

Mounting rail: TS35

General tolerances:  $\pm 1.00 [\pm 0.039]$ 

Note:

1. For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58240047 (A4S wiring type package) , 58240046 (Other packages.)
2. Unless otherwise specified, data in this datasheet should be tested under the conditions of  $T_a=25^{\circ}\text{C}$ , 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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