

1-stage filter for 3-phase systems with neutral conductor



See below:

Approvals and Compliances

Description

- Terminals for three phases, neutral conductor and ground

Applications

- Voltage rating 480 VAC for world wide acceptance
- Protection against interference voltage from the mains
- For standard and industrial applications
- Suitable for use in equipment according to IEC/UL 62368-1

Other versions on request

- Version with wire connection instead of screw-on mounting available on request

References

We recommend for new applications the type [FMAD NEO](#); [FMBD EP](#)

Weblinks

[pdf data sheet](#), [html datasheet](#), [General Product Information](#), [Approvals](#), [Distributor-Stock-Check](#), [Detailed request for product](#), [Microsite](#)

Technical Data

| | |
|-------------------------|--|
| Rated Current | 6 - 550A |
| Rated voltage | 277/480VAC, 50/60 Hz |
| Approval for | 6 - 550A @ 40 (75) °C / 277/480VAC |
| Overload Current | 1.5 x I _r for 1 minute, per hour |
| Leakage Current | industrial < 15mA (440V / 50Hz) |
| Dielectric Strength | 277/480VAC: 2.25kVDC between L-L 1.7kVDC between L-N 3kVDC between L-PE 2.7kVDC between N-PE Test voltage 2 sec |
| Number of Filter Stages | 1-stage |
| Weight | 0.95 - 24.5kg |
| Material: Housing | Metal |
| Sealing Compound | UL 94V-0 |

| | |
|-----------------------|---|
| Mounting | Screw-on mounting on chassis, from top |
| Terminal | Screw clamps |
| Operating Temperature | -25 °C to 100 °C |
| Climatic Category | 25/100/21 acc. to IEC 60068-1 |
| Degree of Protection | IP20 acc. to IEC 60529 |
| Protection Class | Suitable for appliances with protection class I acc. to IEC 61140 |
| MTBF | > 200'000h acc. to MIL-HB-217 F |

Approvals and Compliances

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [Details about Approvals](#)

SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

Approvals



The approval mark is used by the testing authorities to certify compliance with the safety requirements placed on electronic products.

Approval Reference Type: FMAD

| Approval Logo | Certificates | Certification Body | Description |
|---------------|------------------------------|--------------------|------------------------|
| | UL Approvals | UL | UR File Number: E72928 |

Product standards

Product standards that are referenced

| Organization | Design | Standard | Description |
|--|-----------------------|-----------|--|
|  | Designed according to | IEC 60939 | Passive filters for suppressing electromagnetic interference |
|  | Designed according to | UL 1283 | Passive filters for suppressing electromagnetic interference |






Application standards

Application standards where the product can be used

| Organization | Design | Standard | Description |
|--|--------------------------------|----------------|---|
|  | Suitable for applications acc. | IEC/UL 62368-1 | Audio/video, information and communication technology equipment - Part 1: Safety requirements |

Compliances

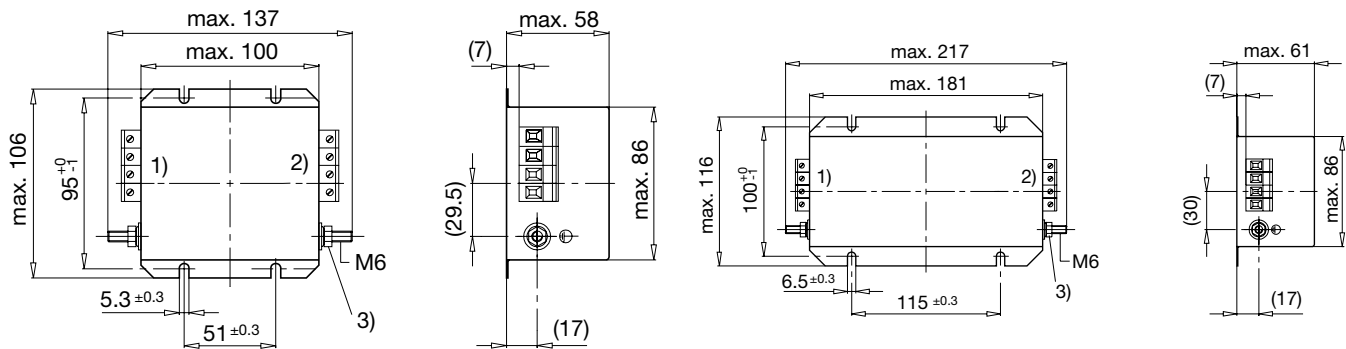
The product complies with following Guide Lines

| Identification | Details | Initiator | Description |
|---|--|-------------|---|
|  | CE declaration of conformity | SCHURTER AG | The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008. |
|  | UKCA declaration of conformity | SCHURTER AG | The UKCA marking declares that the product complies with the applicable requirements laid down in the British Amendment of Regulation (EC) 765/2008. |
|  | RoHS | SCHURTER AG | Directive RoHS 2011/65/EU, Amendment (EU) 2015/863 |
|  | China RoHS | SCHURTER AG | The law SJ / T 11363-2006 (China RoHS) has been in force since 1 March 2007. It is similar to the EU directive RoHS. |
|  | REACH | SCHURTER AG | On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force. |

Dimension [mm]

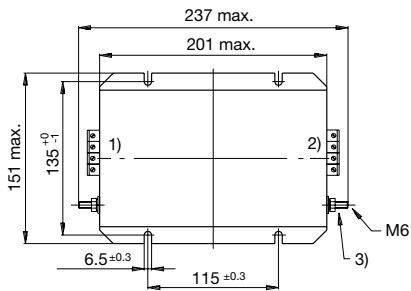
Case 24-4

Case 31-4

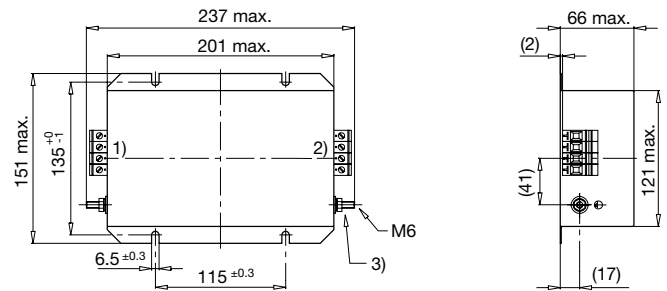


- 1) Line
- 2) Load
- 3) Nut torque 3...4 Nm

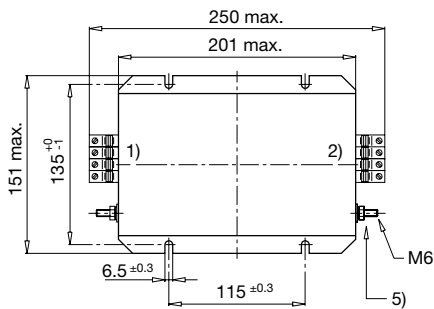
Case 32-4



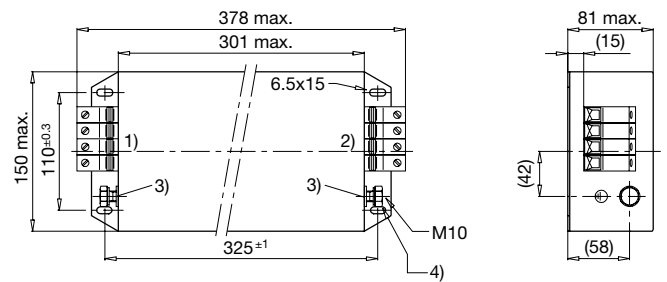
Case 32-8



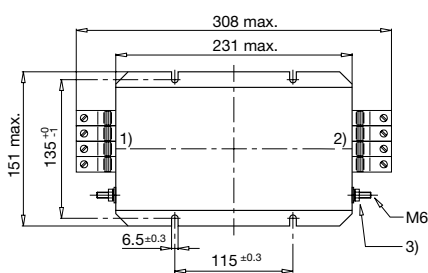
Case 34-4



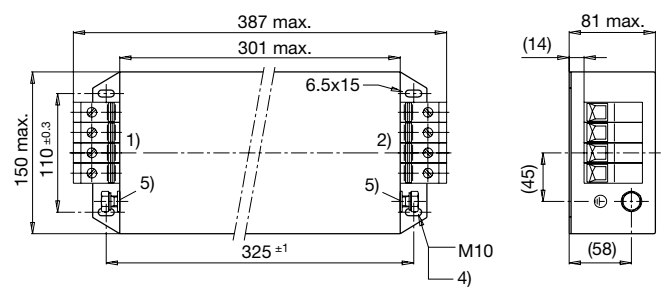
Case 37-4



Case 53-4

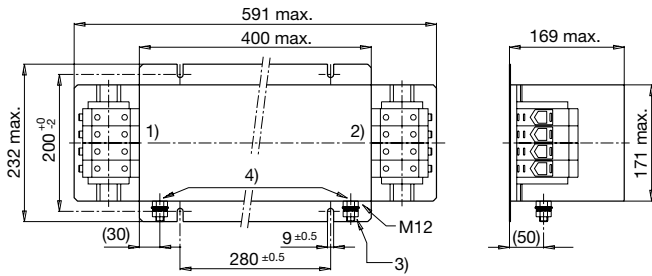


Case 54-4

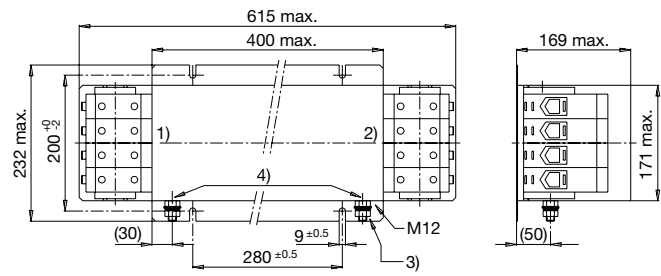


- 1) Line
- 2) Load
- 3) Tightening torque 3...4 Nm
- 4) Tightening torque 10...17 Nm
- 5) Do not unscrew lock-nut

Case 55-4

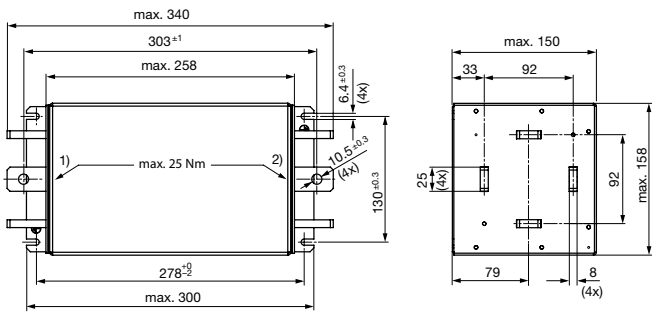


Case 56-4



- 1) Line
- 2) Load
- 3) Nut torque 14...30 Nm
- 4) Do not unscrew lock-nut

Case KQ

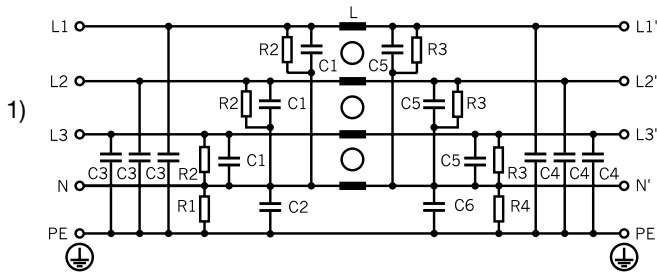


- 1) Line
- 2) Load
- 3) Torsional stress at flat copper max. 25 Nm

Technical data to the filter components

| Rated Current @ Tu 40°C (75°C) [A] | L [mH] | C1 [µF] | C2 [µF] | C3 [nF] | C4 [nF] | C5 [µF] | C6 [µF] | R1 [MΩ] | R2 [MΩ] | R3 [MΩ] | R4 [MΩ] |
|---------------------------------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 6 (4.8) | 9 | 1.0 | - | 100 | 10 | 2.2 | - | - | - | 1 | 2.2 |
| 8 (5) | 8 | 1.0 | - | 100 | 10 | 2.2 | - | - | - | 1 | 2.2 |
| 16 (9.5) | 5 | 1.0 | - | 100 | 10 | 2.2 | - | - | - | 1 | 2.2 |
| 25 (13) | 2.6 | 4.4 | 1 | 10 | 47 | 4.4 | 1 | - | 1 | 1 | 2.2 |
| 36 (19) | 1.8 | 4.4 | 1 | 10 | 47 | 4.4 | 1 | 2.2 | 1 | 1 | - |
| 50 (32) | 0.8 | 4.4 | 1 | 10 | 100 | 4.4 | 1 | 2.2 | 1 | 1 | - |
| 64 (34) | 0.6 | 4.4 | 1 | 10 | 100 | 4.4 | 1 | 2.2 | 1 | 1 | - |
| 80 (43) | 0.9 | 6.6 | 1 | 47 | 100 | 6.6 | 1 | 2.2 | 1 | 1 | - |
| 110 (66) | 0.5 | 6.6 | 1 | 47 | 100 | 6.6 | 1 | 2.2 | 1 | 1 | - |
| 180 (95) | 0.25 | 6.6 | 1 | 47 | 100 | 6.6 | 1 | 2.2 | 1 | 1 | 2.2 |
| 250 (120) | 0.2 | 11 | 1 | 100 | 100 | 11 | 1 | 2.2 | 0.5 | 0.5 | 2.2 |
| 550 (320) | 0.2 | 10 | 1 | 100 | 100 | 10 | 1 | 2.2 | 0.5 | 0.5 | 2.2 |

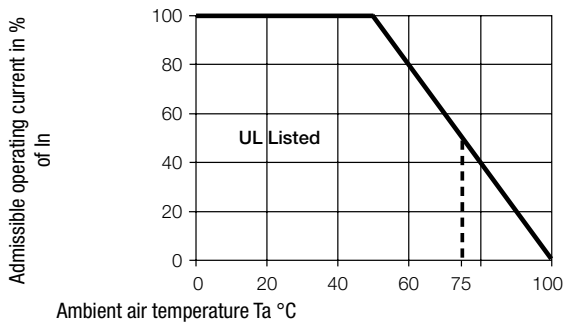
Diagrams



1) Line

Derating Curves

Permissible Working Current as a Function of Ambient Temperature

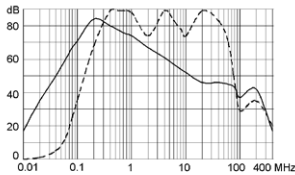


Attenuation Loss

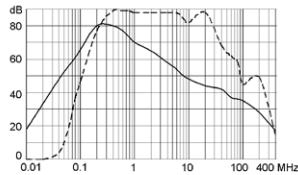
----- 50Ω differential mode _____ 50Ω common mode

Industrial version

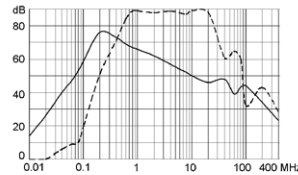
6A (FMAD-0924-0610)



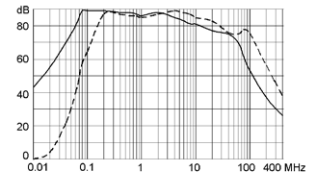
8A (FMAD-0931-0810)



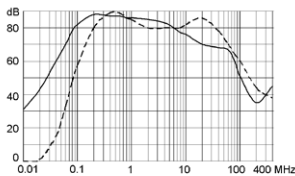
16A (FMAD-0931-1610)
16A (FMAD-0932-1610)



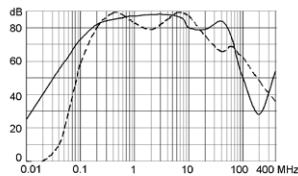
25A (FMAD-0932-2510)



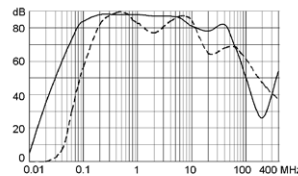
36A (FMAD-0934-3610)



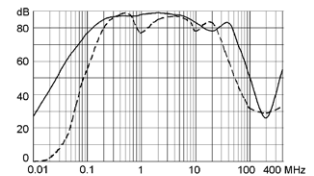
50A (FMAD-0934-5010)



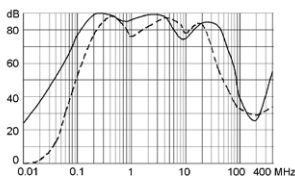
64A (FMAD-0953-6410)



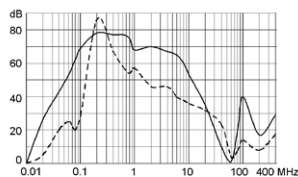
80A (FMAD-0937-8010)



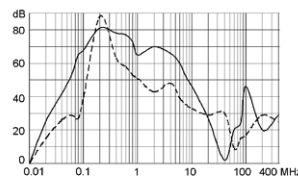
110A (FMAD-0954-H110)



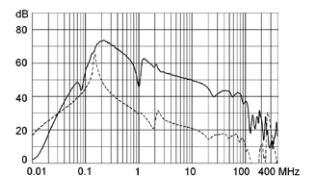
180A (FMAD-0955-H210)



250A FMAD-0956-H310



550A FMAD-09KQ-H650



All Variants

| Rated Current @ Tu 40°C (75°C) [A] | Leakage Current [mA] @ 440V, 60Hz 1) | Tripped Power Dissi- pation [W] | Contact Resi- stance [mΩ] | Weight [kg] | Clamps [mm2] | Housing | Order Number |
|---------------------------------------|---|------------------------------------|------------------------------|----------------|--------------|---------|----------------|
| 6 (4.8) | 1.3 | 3.9 | 27 | 0.95 kg | 4 | 24-4 | FMAD-0924-0610 |
| 8 (5) | 1.3 | 9 | 35 | 1.9 kg | 4 | 31-4 | FMAD-0931-0810 |
| 16 (9.5) | 1.3 | 15.4 | 15 | 2.1 kg | 4 | 31-4 | FMAD-0931-1610 |
| 16 (9.5) | 1.3 | 15.4 | 15 | 3.1 kg | 4 | 32-4 | FMAD-0932-1610 |
| 25 (13) | 8.4 | 11.5 | 4.6 | 3.35 kg | 6 | 32-8 | FMAD-0932-2510 |
| 36 (19) | 8.4 | 21 | 4 | 3.4 kg | 10 | 34-4 | FMAD-0934-3610 |
| 50 (32) | 9.0 | 20 | 2 | 3.4 kg | 10 | 34-4 | FMAD-0934-5010 |
| 64 (34) | 9.0 | 27 | 1.6 | 4.3 kg | 25 | 53-4 | FMAD-0953-6410 |
| 80 (43) | 9.7 | 39 | 1.5 | 7.35 kg | 25 | 37-4 | FMAD-0937-8010 |
| 110 (66) | 9.7 | 58 | 1.2 | 7.25 kg | 50 | 54-4 | FMAD-0954-H110 |
| 180 (95) | 9.7 | 51 | 0.39 | 22 kg | 95 | 55-4 | FMAD-0955-H210 |
| 250 (120) | 10.4 | 62.5 | 0.25 | 24.5 kg | 240 | 56-4 | FMAD-0956-H310 |
| 550 (320) | 10.4 | 36 | 0.03 | 10.6 kg | 10) | KQ | FMAD-09KQ-H650 |

Most Popular.

Availability for all products can be searched real-time: <https://www.schurter.com/en/info-center/support-tools/stock-check-distributors>

10) Connection straps for M10

6A version: packing unit 2 pcs.

1) Leakage current according IEC 60939-1

Packaging unit 1 Pcs