

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 - 550 A
Rated voltage	277/480 VAC, 50/60 Hz
Approval for	6 - 550 A @ 40 (75) °C / 277/480 VAC
Overload Current	1.5 x I _r for 1 minute, per hour
Leakage Current	industrial < 15 mA (440 V / 50 Hz)
Dielectric Strength	277/480 VAC: 2.25 kVDC between L-L 1.7 kVDC between L-N 3 kVDC between L-PE 2.7 kVDC between N-PE Test voltage 2 sec
Number of Filter Stages	1-stage
Weight	0.95 - 24.5 kg
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	> 200'000 h 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

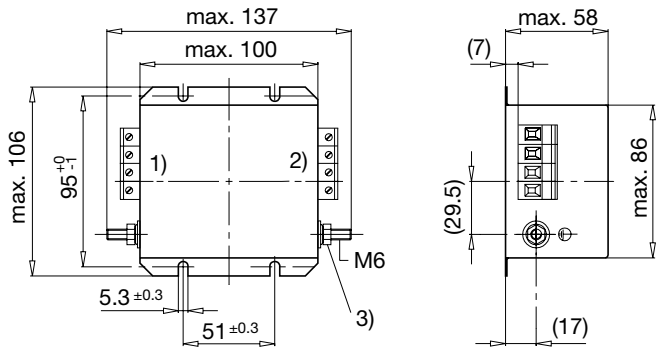
Compliances

The product complies with following Guide Lines

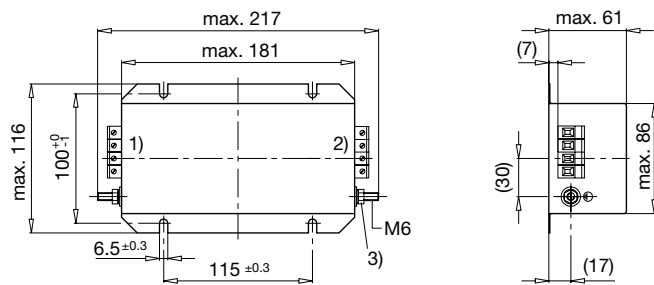
Identification	Details	Initiator	Description
	CE declaration of conformity	SCHURTER AG	The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008.
	UKCA declaration 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

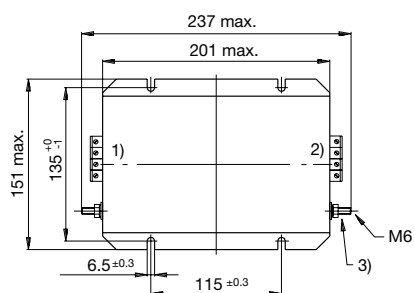


Case 31-4

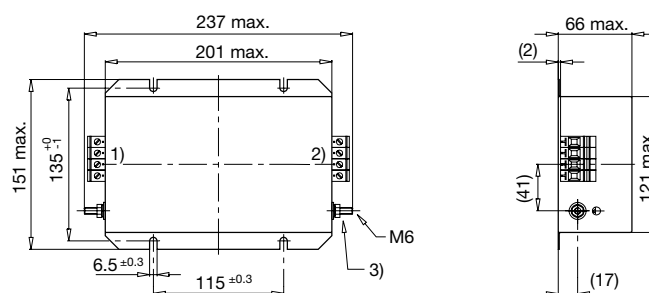


- 1) Line
- 2) Load
- 3) Nut torque 3...4 Nm

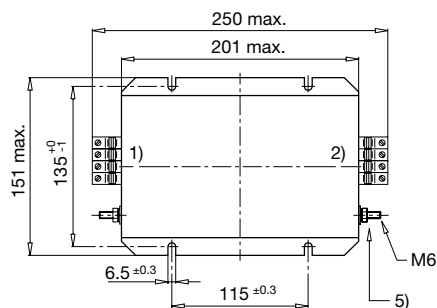
Case 32-4



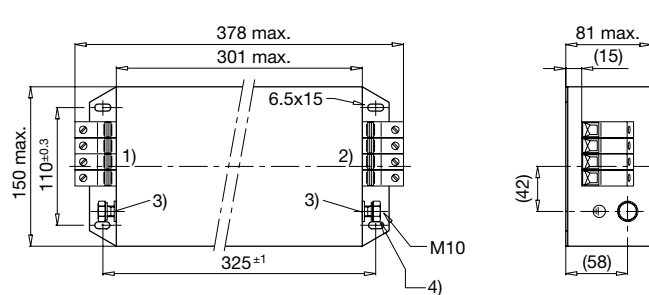
Case 32-8



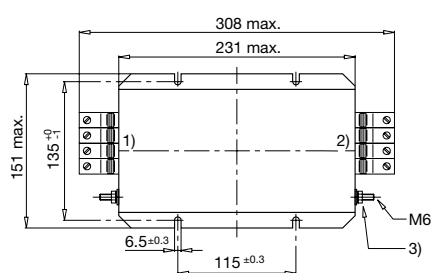
Case 34-4



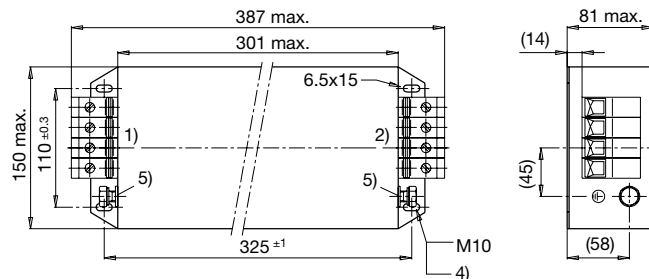
Case 37-4



Case 53-4

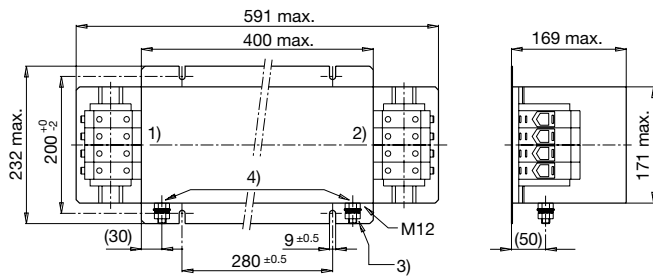


Case 54-4

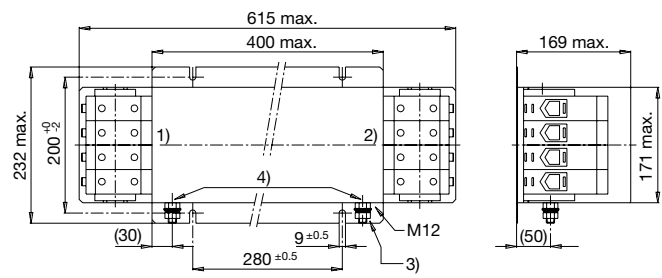


- 1) Line
- 2) Load
- 3) Tightening torque 3...4 Nm
- 4) Tightening torque 10...17 Nm
- 5) Do not unscrew lock-nut

Case 55-4

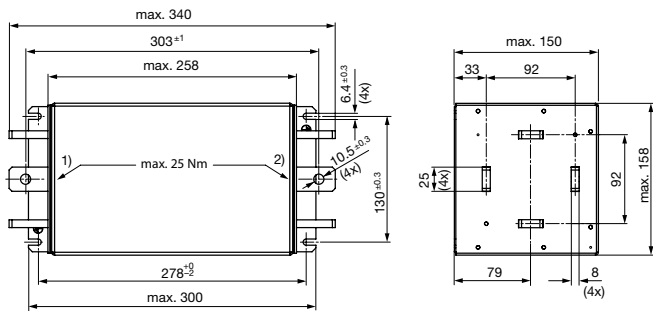


Case 56-4



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

Case KQ

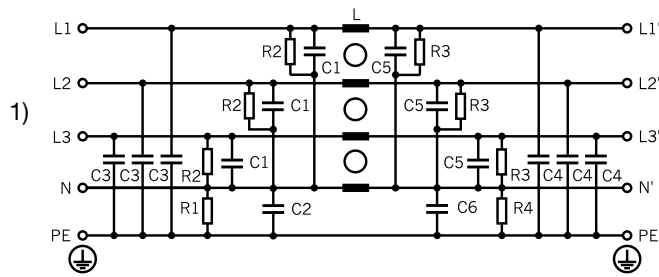


- 1) Line
- 2) Load
- 3) Torsional stress at flat copper max. 25 Nm

Technical data to the filter components

Rated Current @ T _u 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

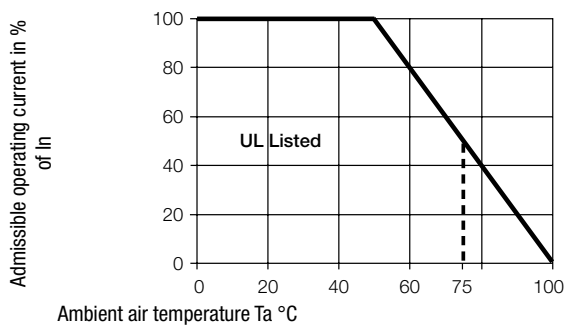
Diagrams



1) Line

Derating Curves

Permissible Working Current as a Function of Ambient Temperature

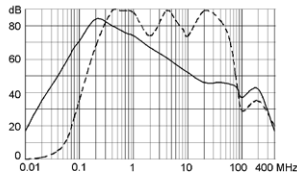


Attenuation Loss

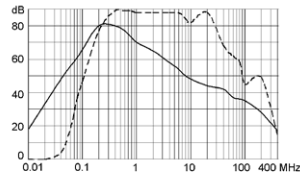
Industrial version

--- 50Ω differential mode ____ 50Ω common mode

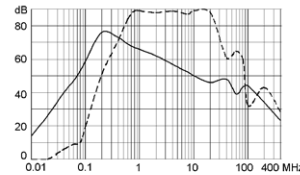
6A (FMAD-0924-0610)



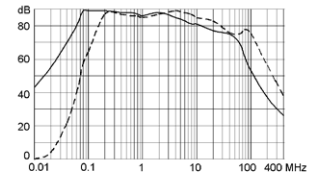
8A (FMAD-0931-0810)



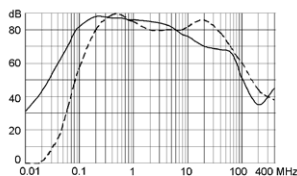
16A (FMAD-0931-1610)
16A (FMAD-0932-1610)



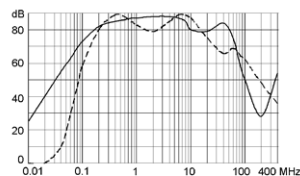
25A (FMAD-0932-2510)



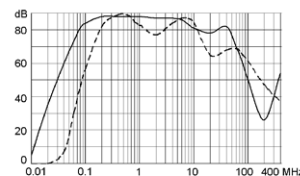
36A (FMAD-0934-3610)



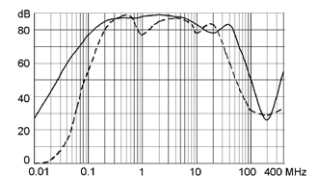
50A (FMAD-0934-5010)



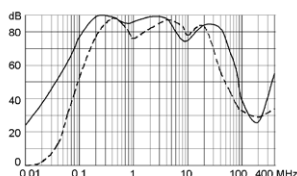
64A (FMAD-0953-6410)



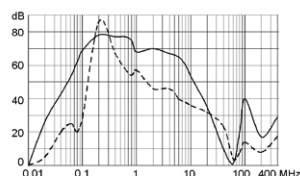
80A (FMAD-0937-8010)



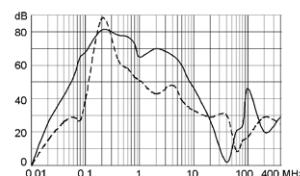
110A (FMAD-0954-H110)



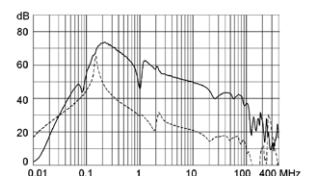
180A (FMAD-0955-H210)



250A FMAD-0956-H310



550A FMAD-09KQ-H650



Variants

Rated Current @ Tu 40°C (75°C) [A]	Leakage Current [mA] @ 440V, 60Hz 1)	Power Dissipation [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

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
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