

Safe and ergonomic EMC/EMI filter with very low leakage current



- | Light weight plastic enclosure design
- | Very low filter leakage current
- | Hinged safety covers
- | Embedded filter terminals
- | Different performance levels
- | Environmental friendly design without potting compound



Approvals



Features and benefits

- | A plastic housing and a metal ground plate are cleverly combined to get the lowest possible product weight without compromising EMC behaviour
- | The embedded terminals from Schaffner guarantee user-friendly handling and reliable, long-lasting electrical connection
- | Captive hinged protective covers contribute to overall safety by offering protection against unintended contact with live conductors. They are included in the standard scope of delivery without any extra cost
- | Very low leakage current values make the filters suitable for grids with very tough requirements or sensitive GFCIs, and for applications which set value on safety and reliability
- | FN 2450 feature an ecologically conscious construction without the use of potting compound or banned substances (RoHS). Used raw materials can be easily separated at the end of the product life time for proper and environmentally safe disposal

Technical specifications

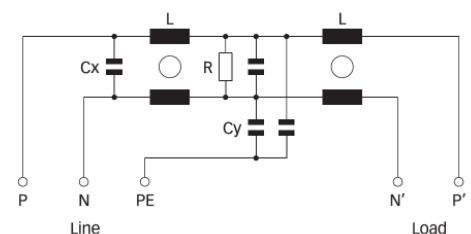
Maximum continuous operating voltage	250 VAC, 50/60 Hz
Operating frequency	dc to 400 Hz
Rated currents	6 to 20 A @ 55 °C
High potential test voltage	P/N -> E 2500 VAC for 60 sec * P -> N 1100 VDC for 2 sec
Temperature range (operation and storage)	-25 °C to +100 °C (25/100/21)
Flammability corresponding to	UL 94 V-0 (safety covers UL94V-1)
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986,
MTBF @ 40°C/230V (Mil-HB-217F)	> 180,000 hours
Design corresponding to	IEC/EN60939, EN60601-1

* Type testing only


Typical applications

- | Electrical and electronic equipment
- | Test and measurement devices
- | Medical devices n Industrial automation
- | Small machines
- | Office automation equipment

Typical electrical schematic



Filter selection table

Filter*	Rated current @ 55 °C (40 °C)	Leakage current** @ 250 VAC/50 Hz	Inductance L	Capacitance		Resistance R	Input/Output connections 	Weight [g]
	[A]	[mA]	[mH]	Cx [uF]	Cy [nF]	[MΩ]		
FN 2450G-6-61	6 (6.8)	0.73	10.5	0.47	4.7	1	-61	210
FN 2450G-10-61	10 (11.4)	0.73	4.9	0.47	4.7	1	-61	210
FN 2450G-16-61	16 (18.2)	0.73	1.84	0.47	4.7	1	-61	210
FN 2450G-20-61	20 (22.8)	0.73	0.94	0.47	4.7	1	-61	210
FN 2450F-6-61	6 (6.8)	0.52	10.5	0.47	3.3	1	-61	210
FN 2450F-10-61	10 (11.4)	0.52	4.9	0.47	3.3	1	-61	210
FN 2450F-16-61	16 (18.2)	0.52	1.84	0.47	3.3	1	-61	210
FN 2450F-20-61	20 (22.8)	0.52	0.94	0.47	3.3	1	-61	210
FN 2450B-6-61	6 (6.8)	0.002	10.5	0.47		1	-61	210
FN 2450B-10-61	10 (11.4)	0.002	4.9	0.47		1	-61	210
FN 2450B-16-61	16 (18.2)	0.002	1.84	0.47		1	-61	210
FN 2450B-20-61	20 (22.8)	0.002	0.94	0.47		1	-61	210

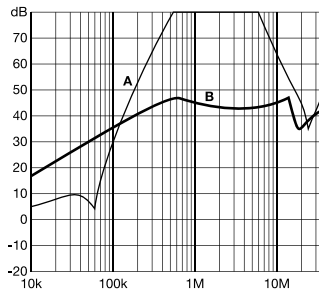
* The letter following FN2450 represents the value of the Y-capacitor and is directly related to the performance and leakage current of the filter. Other Y-capacitor values are available upon request.

** Maximum leakage current under normal operating conditions. Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

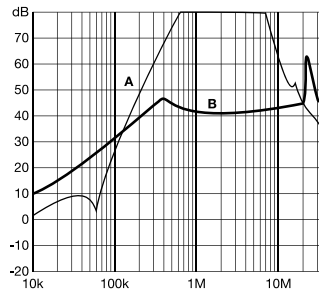
Typical filter attenuation

Per CISPR 17; A = 50 Ω/50 Ω sym; B = 50 Ω/50 Ω asym

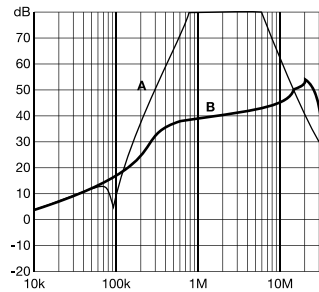
6 A types



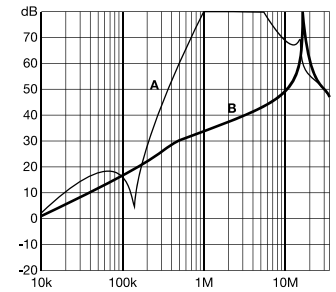
10 A types



16 A types



20 A types



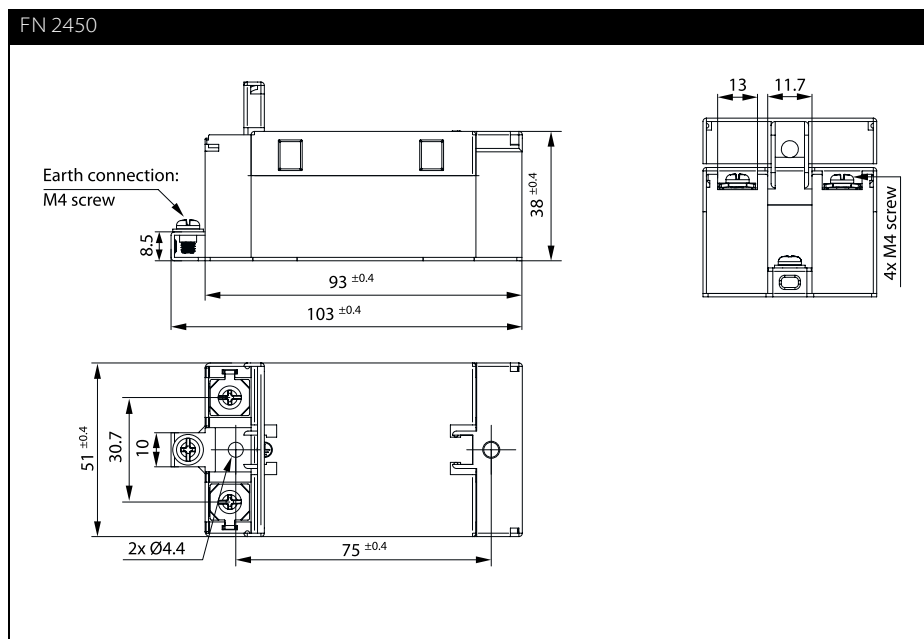
Installation



FN 2450 are delivered with closed plastic covers and fastened terminals. To install the filter please proceed as follows:

- Mount the filter on a metal surface with two appropriate bolts
- First connect the green/yellow wire to the earth stud of the filter
- Gently lift the two hinged plastic covers. n Untighten the terminals with an appropriately sized screw driver
- Connect phase and neutral wires with cable lugs by pushing down and tightening the bolts
- Please note the torque recommendation on the next page
- Push the safety covers back into their locked position to finish the filter installaton

Mechanical data



Filter input/output connector cross sections

	-61 (6 A)	-61 (10 A)	-61 (16 A)	-61 (20A)
Flex wire	1.3 - 2.5 mm ²	1.3 - 2.5 mm ²	4 - 6 mm ²	4 - 6mm ²
AWG type wire	AWG 13 - AWG 16	AWG 13 - AWG 16	AWG 12 - AWG 10	AWG 12 - AWG 10
Ring/fork lug (W/d)*	max. 11 mm/min. Ø 4.3 mm	max. 11 mm/min. Ø 4.3 mm	max. 11 mm/min. Ø 4.3 mm	max. 11mm/min. Ø4.3mm
Recommended torque	0.8-1 Nm	0.8-1 Nm	0.8-1 Nm	0.8 - 1Nm

* Schaffner recommends the use of insulated and UL-recognized ring lugs or fork lugs of the appropriate size.

Please visit www.schaffner.com to find more details on filter connectors.