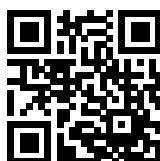


Filter for low leakage current application



- Low leakage EMC filter with high performance options
- Improvement of system reliability
- Tight packaged EMC filter
- Industry standard form factor



Performance indicators

Attenuation performance



Rated current [A]



Technical Specifications

Maximum continuous operating voltage	530 / 305 VAC
Nominal operating voltage	480 VAC
Rated currents	10 - 30 A @ 50°C
Overload capability	1.5 x rated current for 1 minute once per hour
Operating frequency	DC to 60 Hz
High potential test voltage	2.28 kV DC 2s, phase to phase 2.26 kV DC 2s Repetition with max. 80% of the HV test voltage
Operating voltage	530 / 305 VAC
Overvoltage category	III (acc. IEC 60664-1)
Pollution degree	PD2 (acc. IEC60664-1)
Surge withstand	2 kV, phase to phase (acc. to IEC 61000-4-5) 4 kV, phase to protected earth (acc. to IEC 61000-4-5)
Temperature range (operation and storage)	-40°C to +100°C (with derating >50°C)
Climatic category	40/100/21 (acc. IEC 60068-1)
Altitude	2000 m, current and voltage derating above
Protection category	IP 00 (acc. IEC 60529-1)
Flammability corresponding to	UL 94 V0
Vibration and shock	3M4 (cc. IEC60721-3-3) Vibration: 10 to 55Hz, 2G, 3min, 1h each direction Shock: 20G, 11ms once each axial
Design corresponding to	UL/IEC 60939-3 CSA C22.2 No. 8-13
MTBF (Mil-HB-217F)	>300,000 h @ 50°C/480V

Approvals & Compliances



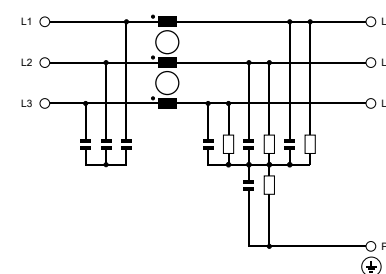
Features and Benefits

- A plastic housing combined with a metal ground plate achieve the lowest possible product weight without compromising EMC behaviour
- The embedded terminals from Schaffner guarantee user-friendly handling and reliable, long-lasting electrical connection
- Fixed, hinged terminal covers contribute to overall safety by providing 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 and for applications which set value on safety and reliability
- FN3040 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

Typical Applications

- Electrical and electronic equipment
- Test and measurement devices
- Medical devices & Industrial automation
- Small machines

Typical electrical schematic



Filter Selection Table

Filter	Core*	Rated current @ 50°C	Leakage current** 530 V/50 Hz	Typical Power loss*** @ 25°C	Weight [kg]	Input/ Output connections
		[A]	[mA]	[W]		
Standard Housing						
FN3040-10-61-C19-R65	MnZn	10	0.19	6.0	0.45	-61
FN3040-10-61-C20-R65	MnZn	10	0.28	6.0	0.45	-61
FN3040-10-61-C21-R65	MnZn	10	0.40	6.0	0.45	-61
FN3040-20-61-C19-R65	MnZn	20	0.19	8.4	0.45	-61
FN3040-20-61-C20-R65	MnZn	20	0.28	8.4	0.45	-61
FN3040-20-61-C21-R65	MnZn	20	0.40	8.4	0.45	-61
FN3040-30-61-C19-R65	MnZn	30	0.19	9.5	0.45	-61
FN3040-30-61-C20-R65	MnZn	30	0.28	9.5	0.45	-61
FN3040-30-61-C21-R65	MnZn	30	0.40	9.5	0.45	-61
FN3041-10-61-C21-R65	Nano	10	0.40	6.0	0.43	-61
FN3041-20-61-C21-R65	Nano	20	0.40	8.4	0.43	-61
FN3041-30-61-C21-R65	Nano	30	0.40	9.5	0.43	-61
DIN Rail Housing						
FN3042-10-61-C19-R65	MnZn	10	0.19	6.0	0.50	-61
FN3042-10-61-C20-R65	MnZn	10	0.28	6.0	0.50	-61
FN3042-10-61-C21-R65	MnZn	10	0.40	6.0	0.50	-61
FN3042-20-61-C19-R65	MnZn	20	0.19	8.4	0.50	-61
FN3042-20-61-C20-R65	MnZn	20	0.28	8.4	0.50	-61
FN3042-20-61-C21-R65	MnZn	20	0.40	8.4	0.50	-61
FN3042-30-61-C19-R65	MnZn	30	0.19	9.5	0.50	-61
FN3042-30-61-C20-R65	MnZn	30	0.28	9.5	0.50	-61
FN3042-30-61-C21-R65	MnZn	30	0.40	9.5	0.50	-61
FN3043-10-61-C21-R65	Nano	10	0.40	6.0	0.45	-61
FN3043-20-61-C21-R65	Nano	20	0.40	8.4	0.45	-61
FN3043-30-61-C21-R65	Nano	30	0.40	9.5	0.45	-61

* Core material: MnZn: Ferrite core material / nano: Nanocrystalline core material
** Maximum leakage current under normal operating conditions (acc. to IEC60939-3).
*** Power Loss [W] calculated: 3*RatedCurrent²*Max.DCRes

Product Selector

FN304x-yy-Czz-R65

zz – Y-capacitor Option

19: 100 nF

20: 150 nF

21: 220 nF

yy – Rated Current

10: 10 A

20: 20 A

30: 30 A

x – Core technology / Mechanical Mounting Version

0: Ferrite core / standard housing (recommended for most applications)

1: Nanocrystalline core / Standard housing (increased performance at ~150 kHz)

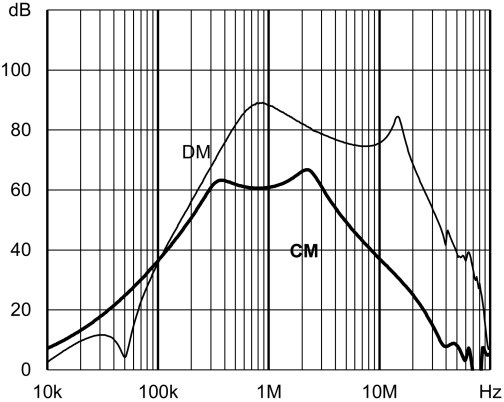
2: Ferrite core / DIN-rail mounting

3: Nanocrystalline core / DIN-rail mounting

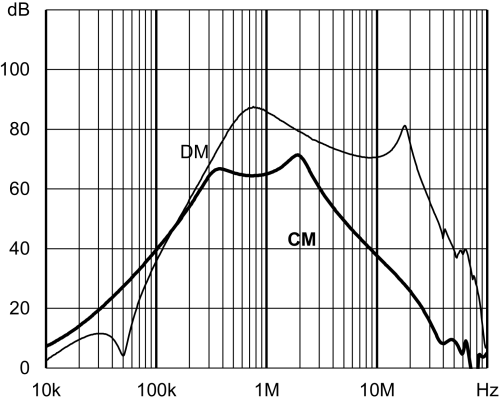
Typical Filter Attenuation

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

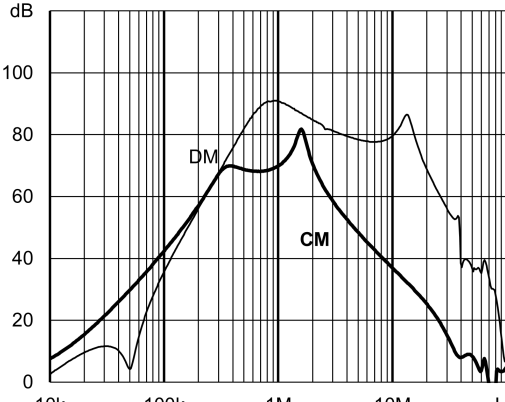
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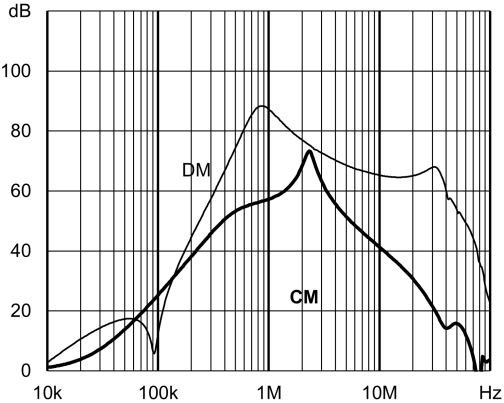
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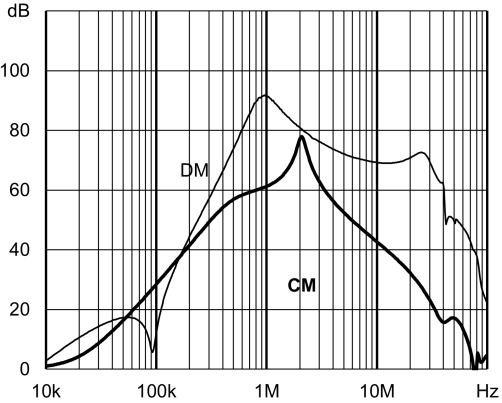
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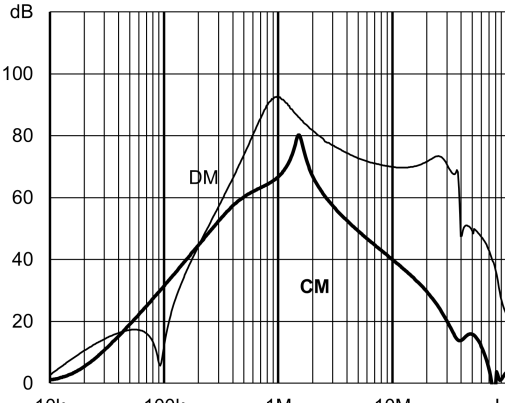
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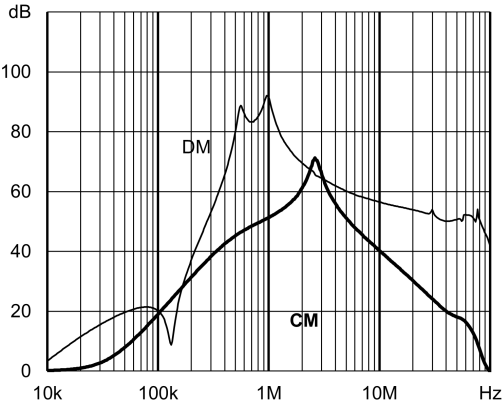
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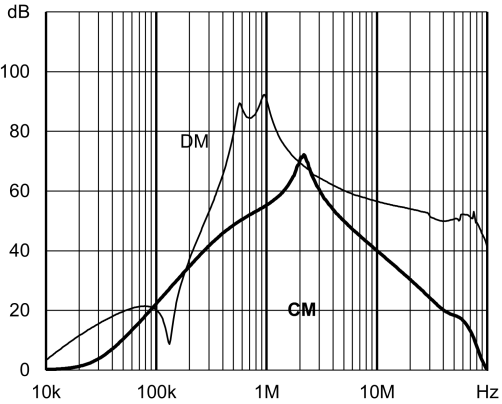
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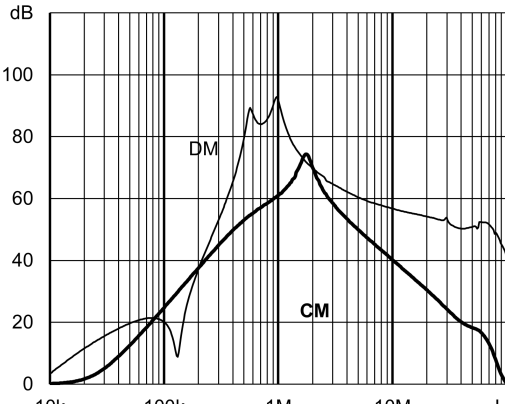
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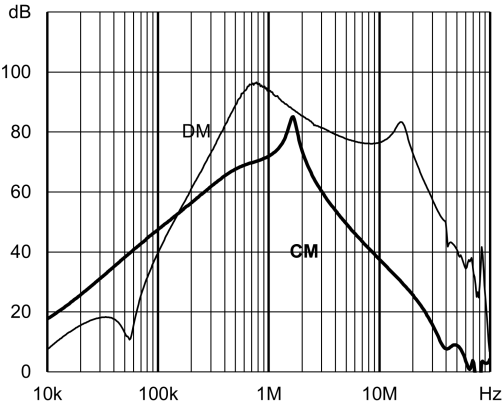
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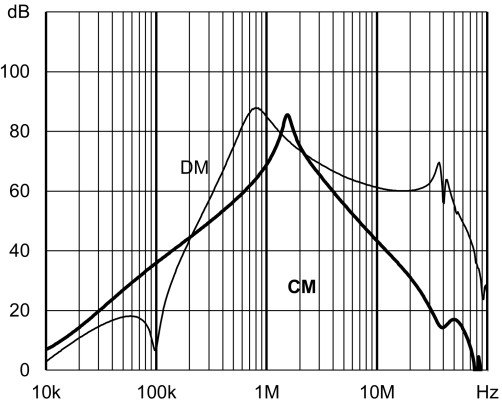
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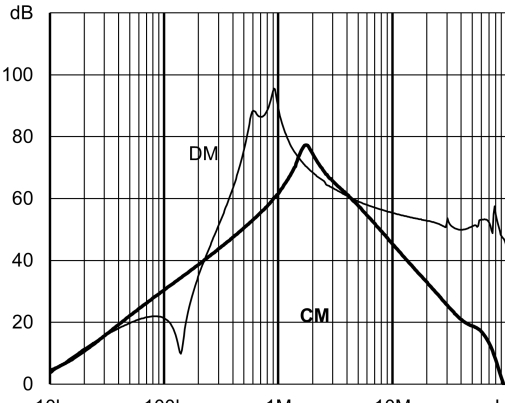
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FN3041-20-61-C21 and FN3043-20-61-C21

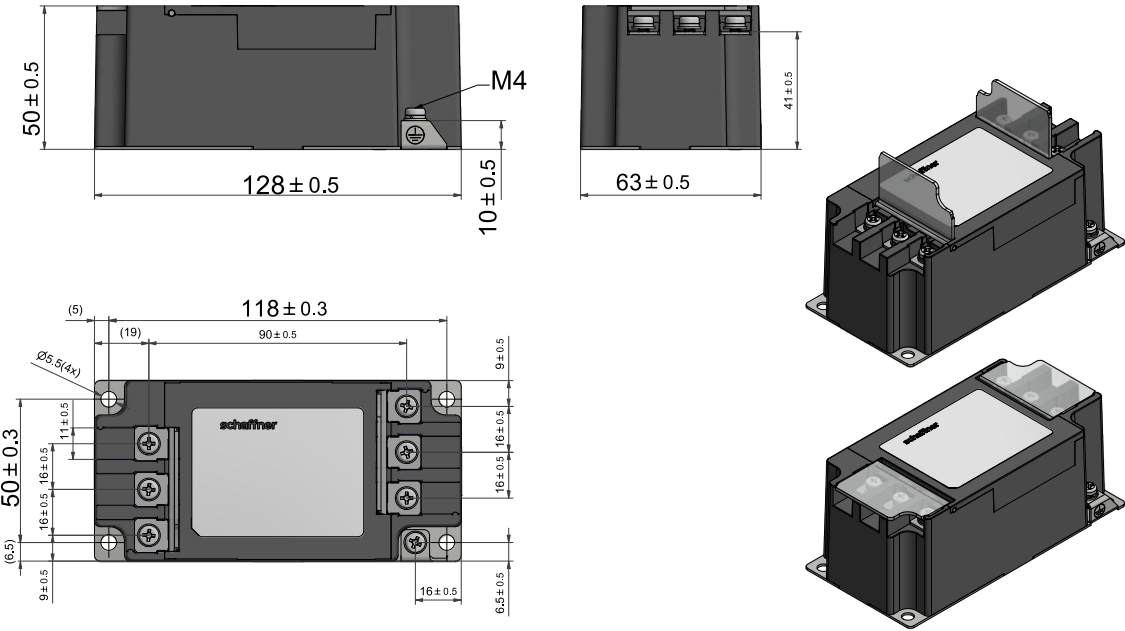


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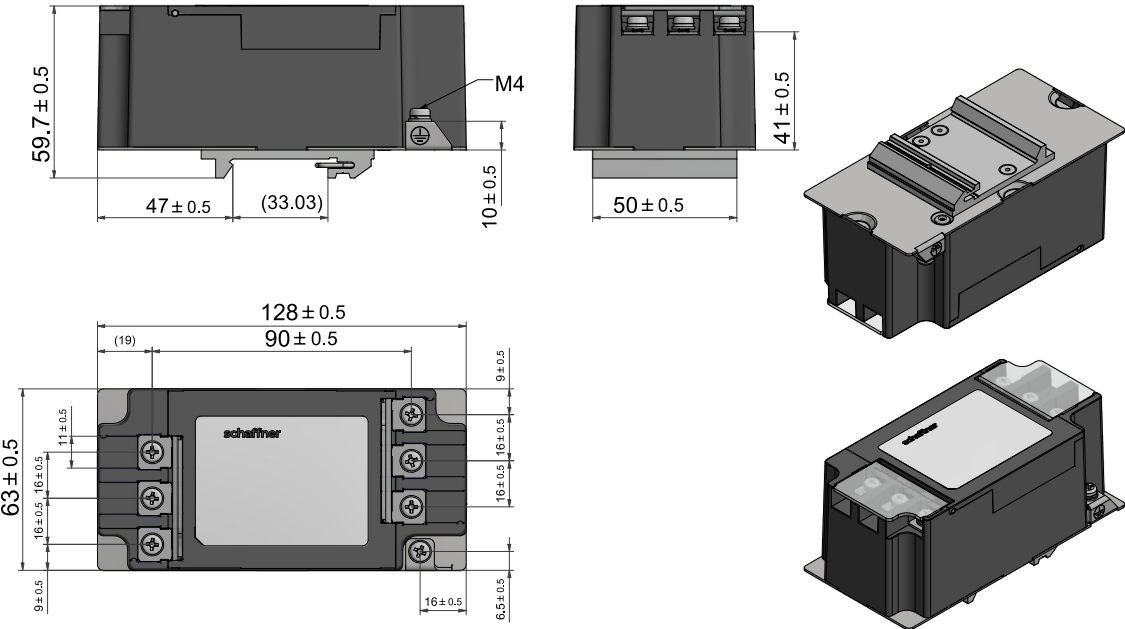


Mechanical Data

Chassis Mounting FN3040 & FN3041



DIN Rail Mounting FN3042 & FN3043



All dimensions in mm. For dimensions without stated tolerances: ISO 2768-m/EN 22768-m
Recommended torque PE: 1.2 - 1.4 Nm

Filter Input/Output Connector Cross Sections

	-61 (10 A)	-61 (20 A)	-61 (30 A)
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
Recommended torque	1.2 - 1.4 Nm	1.2 - 1.4 Nm	1.2 - 1.4 Nm

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

Headquarters, Global
Innovation and
Development

Switzerland
Schaffner Group
Industrie Nord
Nordstrasse 5
4542
Luterbach
+41 32 681 66 26
info@schaffner.com

To find your local partner within
Schaffner's global network [schaffner.com](https://www.schaffner.com)

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Sales and Application
Centers

Finland
Schaffner Oy
Lohjanharjuntie 1109
08500
Lohja
+ 358 50 468 72 84
finlandsales@schaffner.com

France
Schaffner EMC S.A.S.
16-20 Rue Louis Rameau
95875
Bezons
+33 1 34 34 30 60
francesales@schaffner.com

Germany
Schaffner Deutschland GmbH
Ohiostr. 8
76149
Karlsruhe
+49 721 56910
germanysales@schaffner.com

Italy
Schaffner EMC S.r.l.
Via Ticino, 30
20900
Monza (MB)
+39 335 120 44 32
italysales@schaffner.com

United States
Schaffner EMC Inc.
52 Mayfield Avenue
Edison, New Jersey
+1 732 225 9533
usasales@schaffner.com

Japan
Schaffner EMC K.K.
ISM Sangenjaya 7F
1-32-12 Kamiuma Setagaya-ku
154-0011
Tokyo
+81 3 5712 3650
japansales@schaffner.com

Sweden
Schaffner EMC AB
Östermalmströg 1
114 42
Stockholm
+46 8 5050 2425
swedensales@schaffner.com

Switzerland
Schaffner EMV AG
Industrie Nord
Nordstrasse 5
4542
Luterbach
+41 32 681 66 26
switzerlandsales@schaffner.com

India
Schaffner India Pvt. Ltd
Regus World Trade Centre
WTC 22nd Floor Unit No 2238 Brigade
Gateway Campus 26/1 Dr. Rajkumar Road
Malleshwaram (W)
560055
Bangalore
+91 8067935355
indiasales@schaffner.com

United Kingdom
Schaffner Ltd.
Suite 1 Oakmede Place
Terrace Road
RG42 4JF
Binfield
+44 118 9770070
schaffner.uksales@te.com

Singapore
Schaffner EMC Pte Ltd.
Blk 3015A Ubi Road 1 #05-09 Kampong Ubi
Industrial Estate
408705
Singapore
+65 63773283
singaporesales@schaffner.com

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