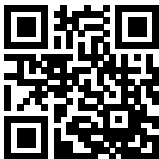


# Low leakage current filter for the Japanese Market



- Designed for corner grounded delta networks (e.g. Japanese electric networks)
- Improvement of system reliability
- Two capacitors in series for high voltage tolerance to ground
- Industry standard form factor
- Lightweight EMC filter housing

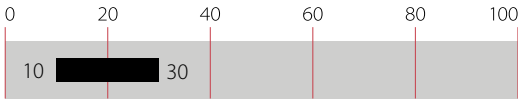


### Performance indicators

Attenuation performance



Rated current [A]



## Technical Specifications

Operating voltage	530 / 305 VAC
Operating frequency	DC to 60 Hz
Rated currents	10 to 30 A @ 50°C
Overload capability	1.5 x rated current for 1 minute once per hour
High potential test voltage	2.28 kV DC 2s, phase to phase 2.5 kV AC 60s, phase to protected earth Repetition with max. 80% of the HV test voltage
Temperature range (operation and storage)	-40°C to +100°C (with derating >50°C)
Climatic category	40/100/21 (acc. IEC 60068-1)
Overvoltage category	III (acc. IEC 60664-1)
Pollution degree	PD2 (acc. IEC60664-1)
Protection category	IP 00 (acc. IEC 60529-1)
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)
Altitude	2000 m, current and voltage derating above
Design corresponding to	UL/IEC 60939-3 CSA C22.2 No. 8-13
Flammability according to	UL 94 V0
Vibration and shock	3M4 (acc. to IEC60721-3-3) Vibration: 10 to 55Hz, 2G, 3min, 1h each direction Shock: 20G, 11ms once each axis
MTBF	> 300'000 h

### Approvals & Compliances



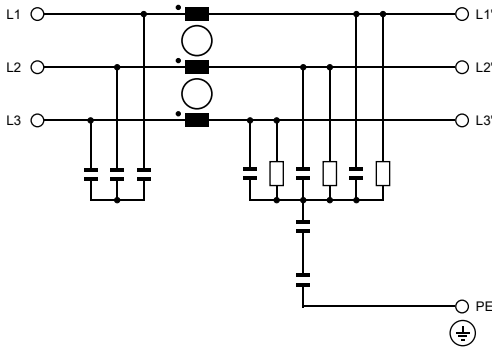
### Features and Benefits

- 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 or sensitive GFCIs, and for applications which set value on safety and reliability
- FN3030 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	Leakage current**		Typical Power Loss****	Weight	Input/ Output
		@ 50°C	530 V/50 Hz	250 V/60 Hz*** corner grounded	@ 25°C		connections
		[A]	[mA]	[mA]	[W]	[kg]	
Standard Housing							
FN3030-10-61-C00-R6	MnZn	10	0.00	0.0	6.0	0.45	-61
FN3030-10-61-C12-R6	MnZn	10	0.01	0.3	6.0	0.45	-61
FN3030-10-61-C18-R6	MnZn	10	0.07	1.8	6.0	0.45	-61
FN3030-10-61-C20-R6	MnZn	10	0.14	4.0	6.0	0.45	-61
FN3030-20-61-C00-R6	MnZn	20	0.00	0.0	8.4	0.45	-61
FN3030-20-61-C12-R6	MnZn	20	0.01	0.3	8.4	0.45	-61
FN3030-20-61-C18-R6	MnZn	20	0.07	1.8	8.4	0.45	-61
FN3030-20-61-C20-R6	MnZn	20	0.14	4.0	8.4	0.45	-61
FN3030-30-61-C00-R6	MnZn	30	0.00	0.0	9.5	0.45	-61
FN3030-30-61-C12-R6	MnZn	30	0.01	0.3	9.5	0.45	-61
FN3030-30-61-C18-R6	MnZn	30	0.07	1.8	9.5	0.45	-61
FN3030-30-61-C20-R6	MnZn	30	0.14	4.0	9.5	0.45	-61
FN3031-10-61-C20-R6	Nano	10	0.14	4.0	6.0	0.43	-61
FN3031-20-61-C20-R6	Nano	20	0.14	4.0	8.4	0.43	-61
FN3031-30-61-C20-R6	Nano	30	0.14	4.0	9.5	0.43	-61
DIN Rail Housing							
FN3032-10-61-C00-R6	MnZn	10	0.00	0.0	6.0	0.50	-61
FN3032-10-61-C12-R6	MnZn	10	0.01	0.3	6.0	0.50	-61
FN3032-10-61-C18-R6	MnZn	10	0.07	1.8	6.0	0.50	-61
FN3032-10-61-C20-R6	MnZn	10	0.14	4.0	6.0	0.50	-61
FN3032-20-61-C00-R6	MnZn	20	0.00	0.0	8.4	0.50	-61
FN3032-20-61-C12-R6	MnZn	20	0.01	0.3	8.4	0.50	-61
FN3032-20-61-C18-R6	MnZn	20	0.07	1.8	8.4	0.50	-61
FN3032-20-61-C20-R6	MnZn	20	0.14	4.0	8.4	0.50	-61
FN3032-30-61-C00-R6	MnZn	30	0.00	0.0	9.5	0.50	-61
FN3032-30-61-C12-R6	MnZn	30	0.01	0.3	9.5	0.50	-61
FN3032-30-61-C18-R6	MnZn	30	0.07	1.8	9.5	0.50	-61
FN3032-30-61-C20-R6	MnZn	30	0.14	4.0	9.5	0.50	-61
FN3033-10-61-C20-R6	Nano	10	0.14	4.0	6.0	0.45	-61
FN3033-20-61-C20-R6	Nano	20	0.14	4.0	8.4	0.45	-61
FN3033-30-61-C20-R6	Nano	30	0.14	4.0	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).

\*\*\* Leakage current for delta network grids, with one corner grounded

\*\*\*\* Power Loss [W] calculated: 3\*RatedCurrent²\*Max.DCRes

Product Selector

FN30vx-yy-Czz-R6

R6

R6: X-resistor value 1.5 MOhm

zz – Y-capacitor Option

12: 6.8 nF

18: 68 nF

20: 150 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

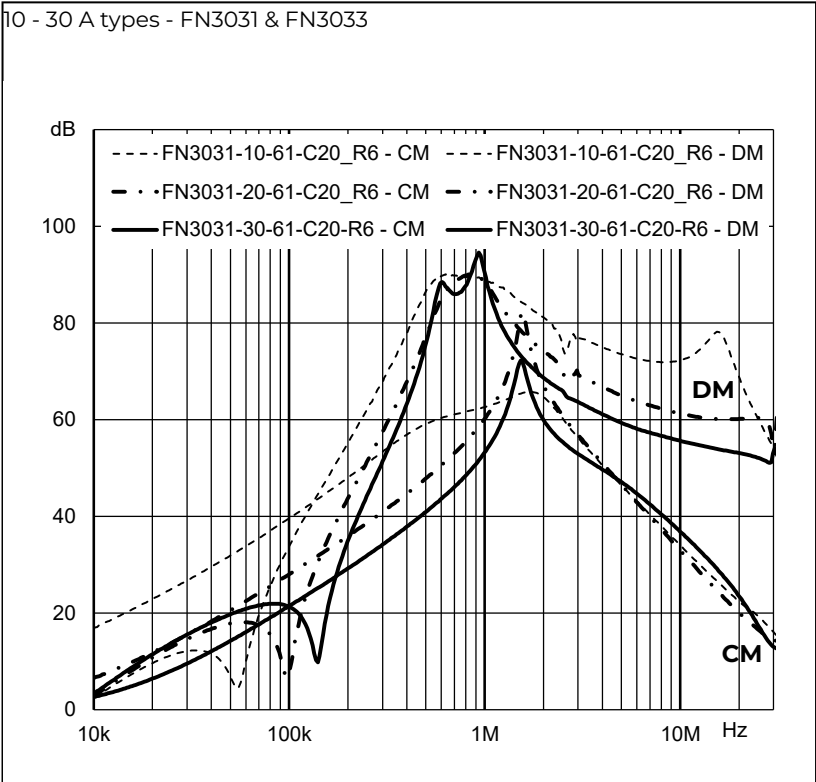
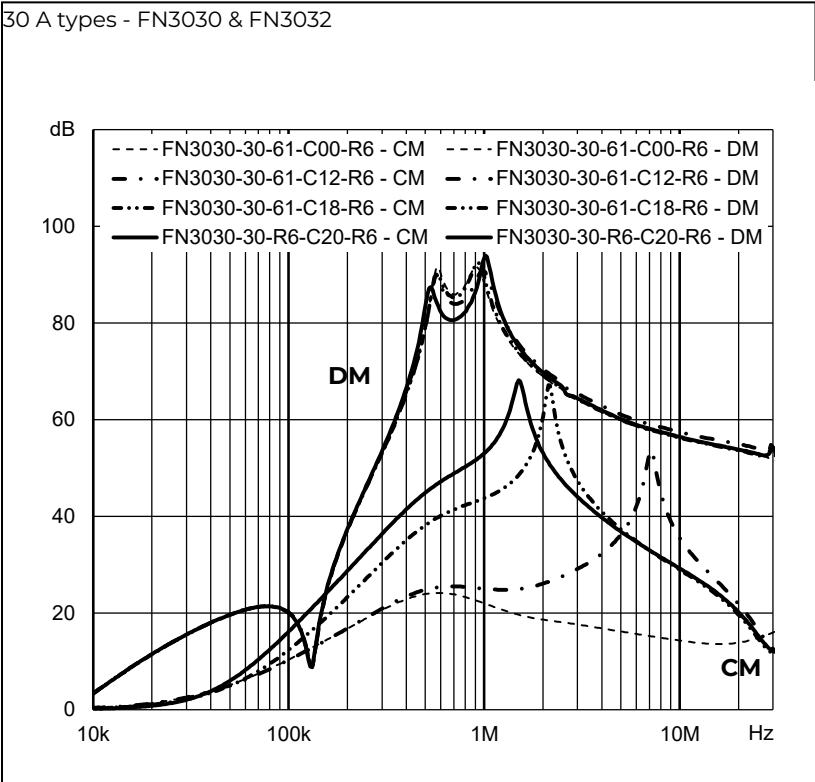
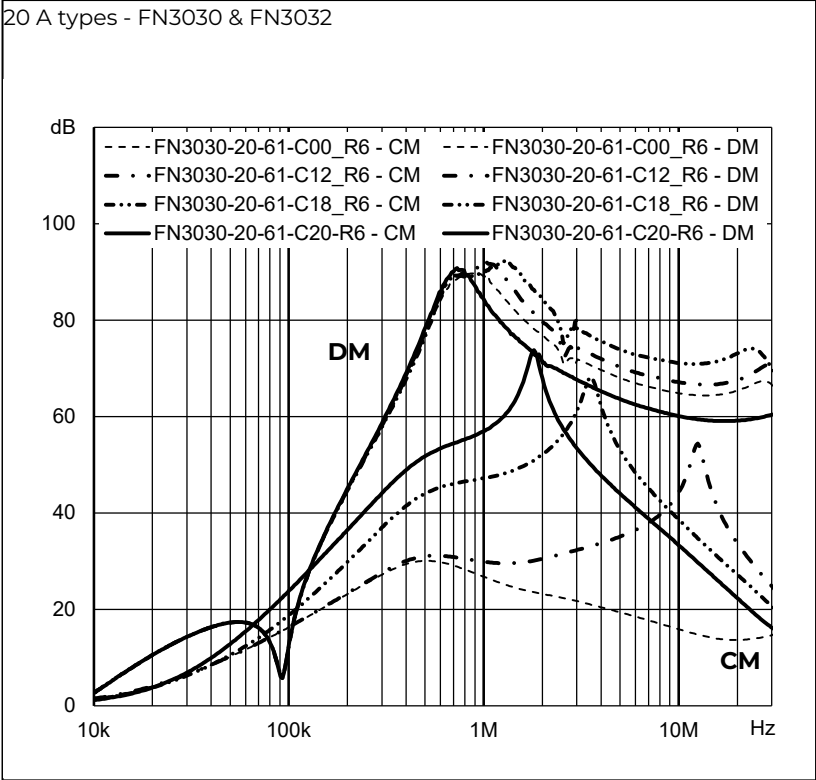
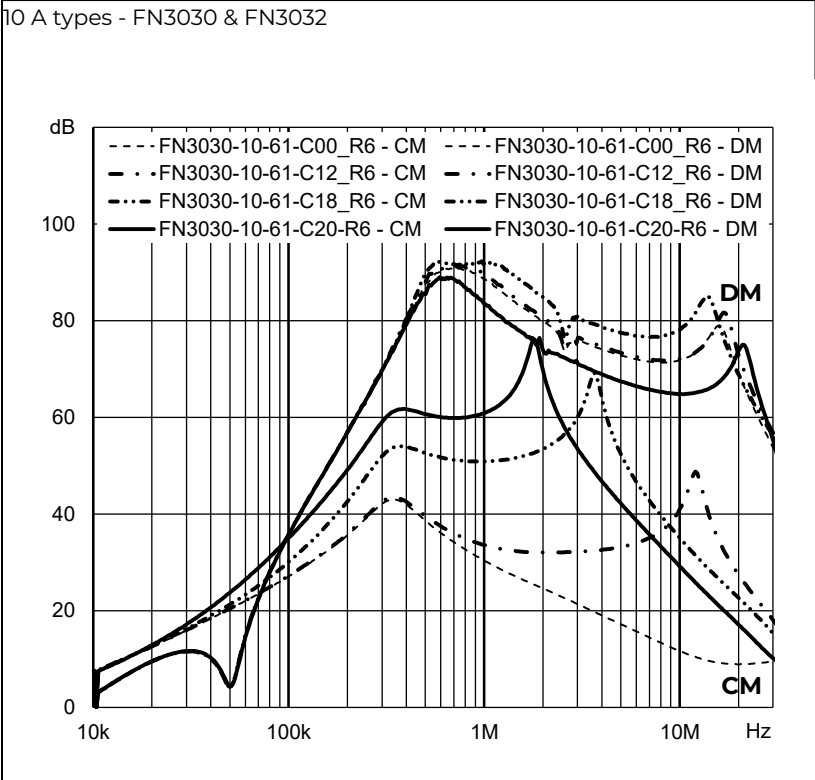
v – Performance / Leakage Current

3: Standard performance, low leakage current (This series)

4: High performance, increased leakage current (Refer to FN3040 series)

Typical Filter Attenuation

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

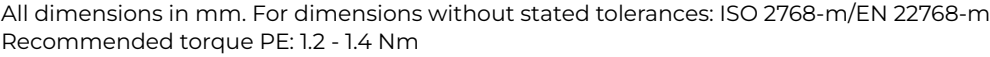


Filter Input/Output Connector Cross Sections

	-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. Ø4.3 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.

## Chassis Mounting FN3030 & FN3031



## Headquarters, Global Innovation and Development

**Switzerland**  
**Schaffner Group**  
Industrie Nord  
Nordstrasse 11e  
4542  
Luterbach  
+41 32 681 66 26  
[info@schaffner.com](mailto: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  
8500  
Lohja  
+358 50 468 7284  
[finlandsales@schaffner.com](mailto: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](mailto:francesales@schaffner.com)

**Germany**  
**Schaffner Deutschland GmbH**  
Schoemperlenstrasse 12B  
76185  
Karlsruhe  
+49 721 56910  
[germanysales@schaffner.com](mailto:germanysales@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](mailto:indiasales@schaffner.com)

**United Kingdom**  
**Schaffner Ltd.**  
Suite 1 Oakmede Place  
Terrace Road  
RG42 4JF  
Binfield  
+44 118 9770070  
[uksales@schaffner.com](mailto:uksales@schaffner.com)

**Singapore**  
**Schaffner EMC Pte Ltd.**  
Blk 3015A Ubi Road 1 #05-09 Kampong Ubi  
Industrial Estate  
408705  
Singapore  
+65 63773283  
[singaporesales@schaffner.com](mailto:singaporesales@schaffner.com)

**Sweden**  
**Schaffner EMC AB**  
Östermalmstrorg 1  
114 42  
Stockholm  
+46 8 5050 2425  
[swedensales@schaffner.com](mailto:swedensales@schaffner.com)

**Switzerland**  
**Schaffner EMV AG**  
Industrie Nord  
Nordstrasse 11e  
4542  
Luterbach  
+41 32 681 66 26  
[switzerlandsales@schaffner.com](mailto:switzerlandsales@schaffner.com)

**Taiwan**  
**Schaffner EMV Ltd.**  
U-Town  
20 Floor-2 No 97 Section 1 XinTai 5th Road  
XiZhi District  
22175  
New Taipei City  
+886 226975500  
[taiwansales@schaffner.com](mailto:taiwansales@schaffner.com)

**Italy**  
**Schaffner EMC S.r.l.**  
Via Ticino, 30  
20900  
Monza (MB)  
+39 039 21 41 070  
[italysales@schaffner.com](mailto:italysales@schaffner.com)

**United States**  
**Schaffner EMC Inc.**  
52 Mayfield Avenue  
Edison, New Jersey  
+1 732 225 9533  
[usasales@schaffner.com](mailto: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](mailto:japansales@schaffner.com)