

# General Performance EMC/EMI Filter with Earth Line Choke



- Rated currents up to 15 A
- Excellent performance/size ratio
- Integrated earth line choke
- Complies with IEC/EN 60601-1
- Snap-in versions (S and S1 type)
- Optional wide mounting flanges



Performance indicators

Approvals & Compliances



(CQC except HI-types)

The FN 9222 E IEC inlet filter combines an IEC inlet and mains filter with excellent filter attenuation in a small form factor and integrated earth line choke. Choosing the FN 9222 E product line brings you the rapid availability of a standard filter associated with the necessary safety acceptances. Standard IEC connector filters are a practical solution helping you to pass EMI system approval in a short time. A wide selection on amperage ratings, output connections, mounting possibilities and filters for medical applications are designed to offer you the desired solution.

## Technical specifications

<b>Maximum continuous operating voltage</b>	250 VAC, 50/60 Hz
<b>Operating frequency</b>	DC to 400 Hz dc to 400 Hz
<b>Rated currents</b>	1 to 15 A @ 50°C max.
<b>Approvals by rated current</b>	1 to 10 A (ENEC, CQC) 1 to 15 A (UL, CSA)
<b>High potential test voltage</b>	P → PE 2000 VAC for 2 sec (standard types) P → PE 2500 VAC for 2 sec (B types) P → N 1000 VAC for 2 sec
<b>Protection category</b>	IP 40 according to IEC 60529
<b>Temperature range (operation and storage)</b>	-25°C to +85°C (25/85/21)
<b>Design corresponding to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
<b>Flammability corresponding to</b>	UL 94 V-2 or better
<b>MTBF @ 40°C/230 V (Mil-HB-217F)</b>	1,610,000 hours

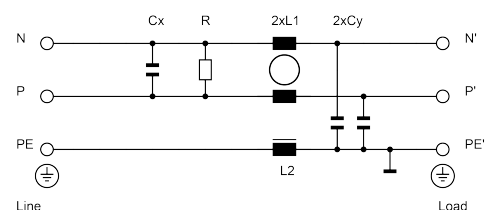
## Features and benefits

- Exceptional conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- Rear/front or snap-in mounting
- FN 9222 B versions comply with the requirements of 1MOP acc. to IEC/EN 60601-1 for creepage and clearance, leakage current and high potential testing
- Wide mounting flanges available
- Different output connections offering maximum flexibility for assembly
- Without earth line choke see FN 9222 data sheet
- Custom-specific versions are available on request


## Typical electrical schematic

- Portable electrical and electronic equipment
- Small to medium-sized machines and household equipment
- Single-phase power supplies, switch-mode power supplies
- Test and measurement equipment
- Medical equipment
- Rack mounting equipment

Typical electrical schematic







### Filter selection table

Filter	Rated current @ 50°C (5 °C)	Leakage current* @ 250 VAC/50 Hz (@ 120 VAC/60 Hz)	Inductance		Capacitance		Resistance R	Output connections	Weight
			L1	L2	Cx	Cy			
	[A]	[mA]	[mH]	[mH]	[µF]	[nF]	[kΩ]		[g]
FN9222Ex-1-06	1 (1.2)	0.31 (0.18)	12	0.4	0.1	2.2		-06	46
FN9222Ex-3-06	3 (3.5)	0.31 (0.18)	2.5	0.4	0.1	2.2		-06	46
FN9222Ex-6-06	6 (7.2)	0.31 (0.18)	0.78	0.4	0.1	2.2		-06	46
FN9222Ex-8-06	8 (10.6)	0.31 (0.18)	0.5	0.4	0.1	2.2		-06	46
FN9222Ex-10-06	10 (11.6)	0.31 (0.18)	0.225	0.1	0.1	2.2		-06	46
FN9222Ex-12-06	12 (12)	0.31 (0.18)	0.11	0.1	0.1	2.2		-06	46
FN9222Ex-15-06	15 (15)	0.31 (0.18)	0.075	0.1	0.1	2.2		-06	46
FN9222Ex-12-06HI	12 (12)	0.31 (0.18)	0.11	0.1	0.1	2.2		-06	46
FN9222Ex-15-06HI	15 (15)	0.31 (0.18)	0.075	0.1	0.1	2.2		-06	46
FN9222ExR-1-06	1 (1.2)	0.31 (0.18)	12	0.4	0.1	2.2	1000	-06	46
FN9222ExR-3-06	3 (3.5)	0.31 (0.18)	2.5	0.4	0.1	2.2	1000	-06	46
FN9222ExR-6-06	6 (7.2)	0.31 (0.18)	0.78	0.4	0.1	2.2	1000	-06	46
FN9222ExR-8-06	8 (10.6)	0.31 (0.18)	0.5	0.4	0.1	2.2	1000	-06	46
FN9222ExR-10-06	10 (11.6)	0.31 (0.18)	0.225	0.1	0.1	2.2	1000	-06	46
FN9222ExR-12-06	12 (12)	0.31 (0.18)	0.11	0.1	0.1	2.2	1000	-06	46
FN9222ExR-15-06	15 (15)	0.31 (0.18)	0.075	0.1	0.1	2.2	1000	-06	46
FN9222ExR-12-06HI	12 (12)	0.31 (0.18)	0.11	0.1	0.1	2.2	1000	-06	46
FN9222ExR-15-06HI	15 (15)	0.31 (0.18)	0.075	0.1	0.1	2.2	1000	-06	46
FN9222ExB-1-06	1 (1.2)	0.00	12	0.4	0.1		1000	-06	46
FN9222ExB-3-06	3 (3.5)	0.00	2.5	0.4	0.1		1000	-06	46
FN9222ExB-6-06	6 (7.2)	0.00	0.78	0.4	0.1		1000	-06	46
FN9222ExB-8-06	8 (10.6)	0.00	0.5	0.4	0.1		1000	-06	46
FN9222ExB-10-06	10 (11.6)	0.00	0.225	0.1	0.1		1000	-06	46
FN9222ExB-12-06	12 (12)	0.00	0.11	0.1	0.1		1000	-06	46
FN9222ExB-15-06	15 (15)	0.00	0.075	0.1	0.1		1000	-06	46
FN9222ExB-12-06HI	12 (12)	0.00	0.11	0.1	0.1		1000	-06	46
FN9222ExB-15-06HI	15 (15)	0.00	0.075	0.1	0.1		1000	-06	46

\* Leakage current under normal operating conditions (acc. to IEC60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

### Product selector

FN 9222Exx-yy-..HI-zz







- Snap-in range for S version only
  - Blank: Snap-in range 0.7 to 1.5mm
  - 20: Snap-in range 1.5 to 2.2mm
- Blank: Standard IEC inlet type C14
  - HI: Hot IEC inlet type C16 (12 and 15A types only)
- 06: Faston 6.3 x 0.8mm (spade/soldering)
- 1 to 15: Rated current
- Blank: Standard version
  - R: Bleed resistor
  - B: Medical version (with bleed resistor and without Y2-capacitor)
-  Blank: Standard housing with mounting flanges
-  U: Housing with wider mounting flanges
-  S: Snap-in version, snapper on vertical side
-  S1: Snap-in version, snapper on horizontal side

### Distributor inventory

Check stock levels at global distributors via the QR code



#### Stock level per types 1 - 15 A

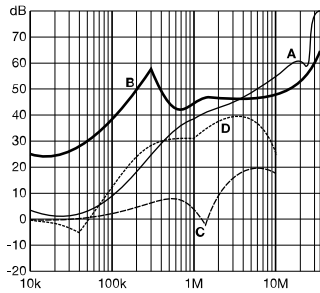
	Link
Standard housing types	
Housing with wider mounting flanges (U)	
Snap-in housing types (S&S1)	
Medical versions (B)	
Bleed resistor types (R)	
Surge protection types (UZ)	



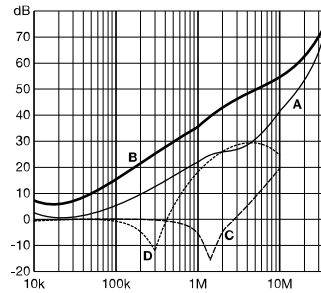
### Typical filter attenuation

Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym; C=0.1 Ω/100 Ω sym; D=100 Ω/0.1 Ω sym

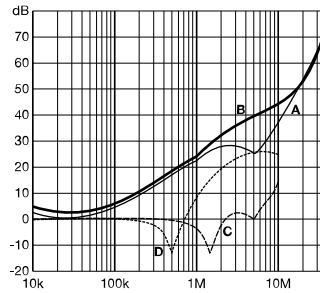
1 and 3 A types



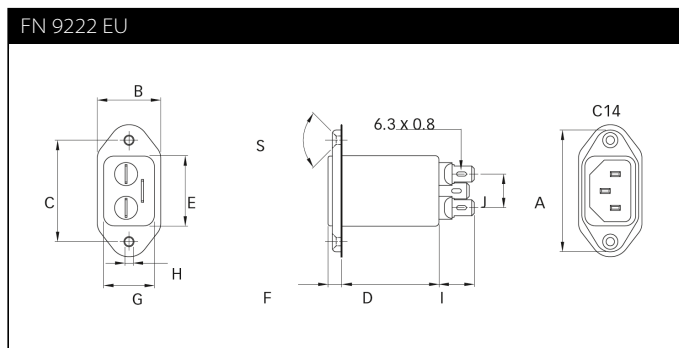
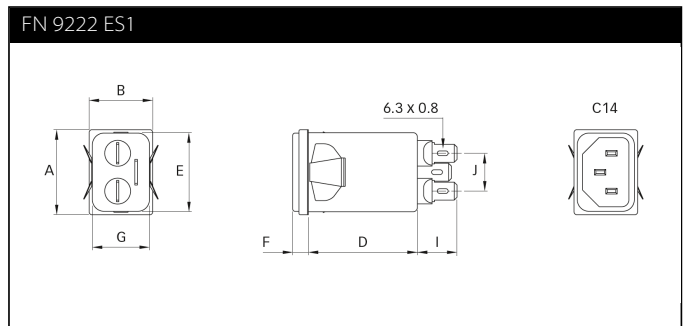
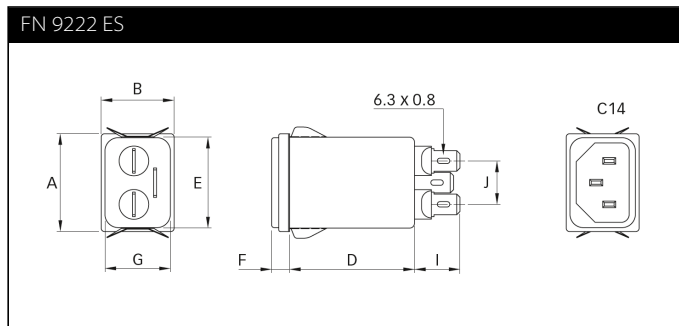
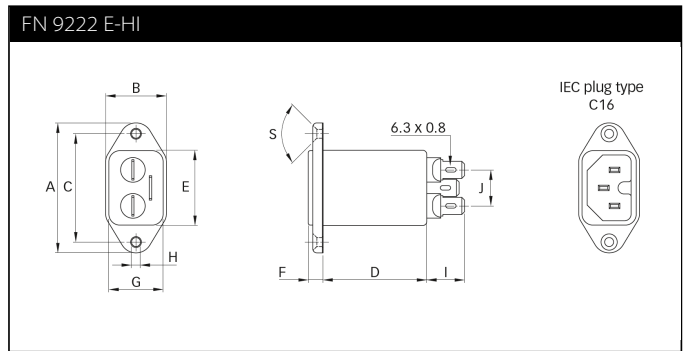
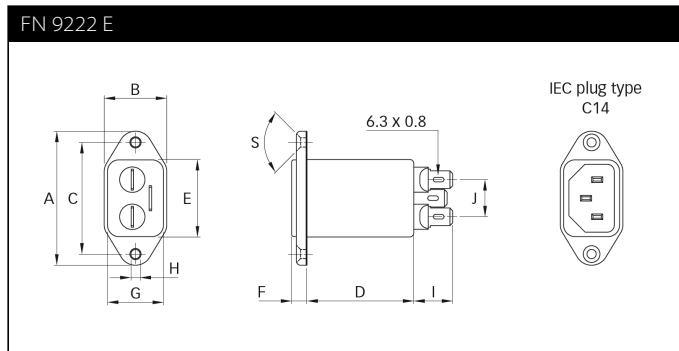
6 to 10 A types

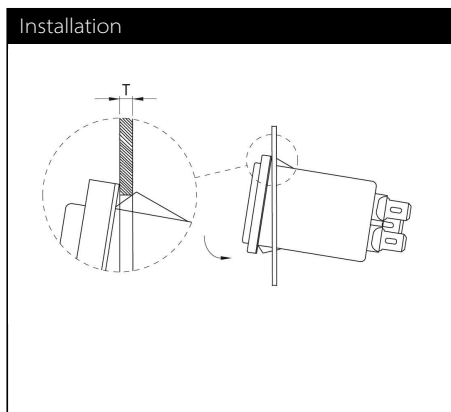
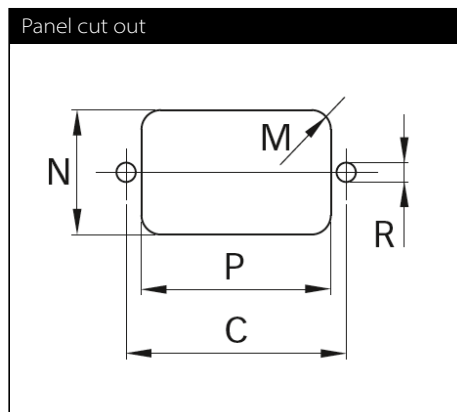


12 and 15 A types



### Mechanical data





## Dimensions

	FN 9222 E	FN 9222 EU	FN 9222 ES	FN 9222 ES1	FN 9222 E-HI	Tol.
<b>A</b>	48	48	29.9	29.9	48	
<b>B</b>	22.4	25	22.4	22.4	22.4	
<b>C</b>	40	40			40	±0.2
<b>D</b>	46.8	46.7	46.8	46.8	46.8	
<b>E</b>	27.8	27.7	27.8	27.8	27.8	+0.6/-0
<b>F</b>	5.7	5.7	5.7	5.7	5.7	
<b>G</b>	20.1	20.1	20.1	20.1	20.1	+0.6/-0
<b>H</b>	Ø3.3	Ø3.3			Ø3.3	
<b>I</b>	14	14	14	14	14	
<b>J</b>	13.3	13.3	13.3	13.3	13.3	
<b>M</b>	R ≤3	R ≤3	R ≤1.5	R ≤1.5	R ≤3	
<b>N</b>	21.5	21.5	20.8	21.9	21.5	
<b>P</b>	28.5	28.5	29.4	28.5	28.5	
<b>R*</b>	M3	M3			M3	
<b>S</b>	90°	90°			90°	
<b>T**</b>			0.7 - 1.5	0.7 - 1.5		
<b>T**</b>			1.5 - 2.2	1.5 - 2.2		

\* Recommended torque for M3 (90° countersunk flat head) is 0.5 Nm

\*\* For selecting the panel thickness, please refer to the filter selector table.

All dimensions in mm; 1 inch = 25.4 mm  
Tolerances according: ISO 2768-m/EN 22768-m

Please visit [www.schaffner.com](http://www.schaffner.com) to find more details on filter connectors.

## Accessories

### Power Cord with angled Locking System C13



- | Locking system for standardized IEC C14 inlet filter
- | No accidental disconnection
- | Rated current up to 15 A
- | Fits any Schaffner IEC C14 inlet filter
- | Retrofit for any IEC C14 inlet
- | Various power line plugs for international usage

[Datasheet PDF >](#)

### IL 13P IEC C13 Rewireable Angled Connectors with Locking System



- | Locking system for standardized IEC C14 inlet filter
- | No accidental disconnection
- | Rated current up to 15 A
- | Fits any Schaffner IEC C14 inlet filter
- | Retrofit for any IEC C14 inlet
- | Various power line plugs for international usage

[Datasheet PDF >](#)

### IL 13P IEC C13 Rewireable Connectors with Locking System



- | Guards against accidental disconnection
- | Requires no other equipment or special inlets to secure it
- | Rewireable - offering total flexibility when assembling cables
- | Fits any Schaffner IEC C14 inlet Filter
- | Can be retrofitted
- | Various power line plugs for international usage
- | LSZH - Low smoke zero halogen

[Datasheet PDF >](#)



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