

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



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

Maximum continuous operating voltage	250 VAC, 50/60 Hz
Nominal operating voltage	230 VAC
Rated currents	1 to 15 A @ 50°C
Operating frequency	dc to 400 Hz DC to 400 Hz
High potential test voltage	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
Temperature range (operation and storage)	-25°C to +85°C (25/85/21)
Protection category	IP 40 according to IEC 60529
Flammability corresponding to	Plastic Material: UL 94 V-0 Laces for -07 version: UL 94 VW-1
Approvals by rated current	1 to 10 A (ENEC, CQC) 1 to 15 A (UL, CSA)
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF (Mil-HB-217F)	>1,610,000 h @ 50°C/230 V

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

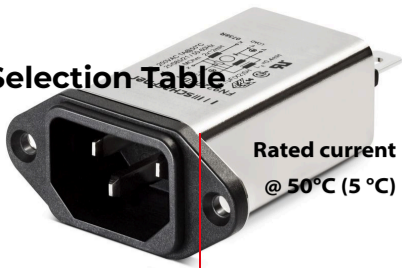
Typical Applications


- 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

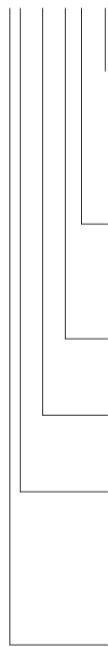


Filter	Rated current @ 50°C (5 °C) [A]	Leakage current* @ 250 VAC/50 Hz (@ 120 VAC/60 Hz) [mA]	Inductance		Capacitance		Resistance R [kΩ]	Output connections 	Weight [g]
			L1 [mH]	L2 [mH]	Cx [μF]	Cy [nF]			
FN9222Ex-1-06	1 (1.2)	0.31 (0.18)	12	0.4	0.1	2.2		-06	46
FN9222Ex-3-06	3 (3.5)	0.31 (0.18)	2.5	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)	

**For example: FN 9222 E-15-06, FN 9222 ES1B-10-06-20, FN 9222 EUB-8-06-20

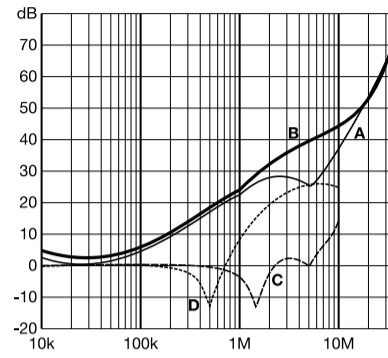
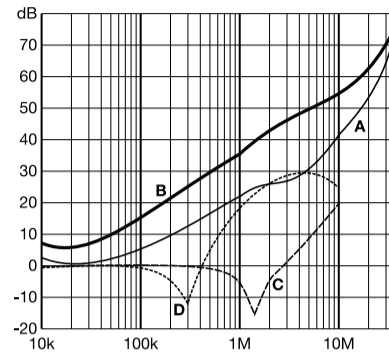
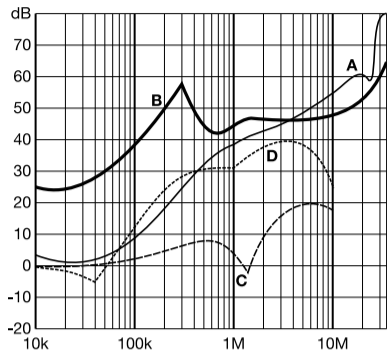
Typical Filter Attenuation

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

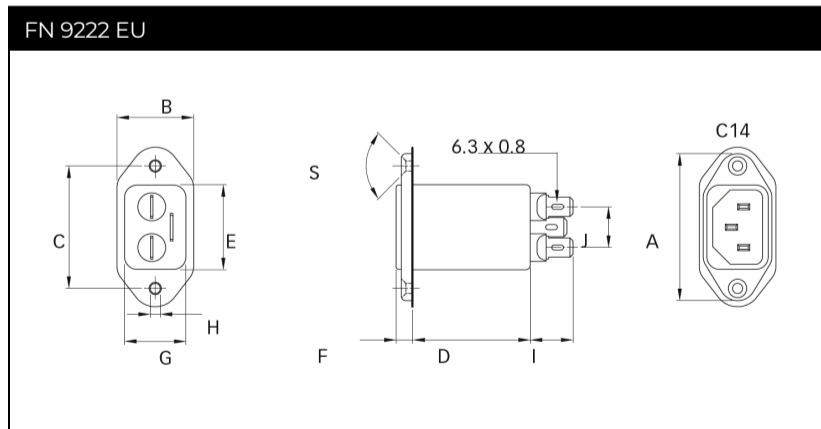
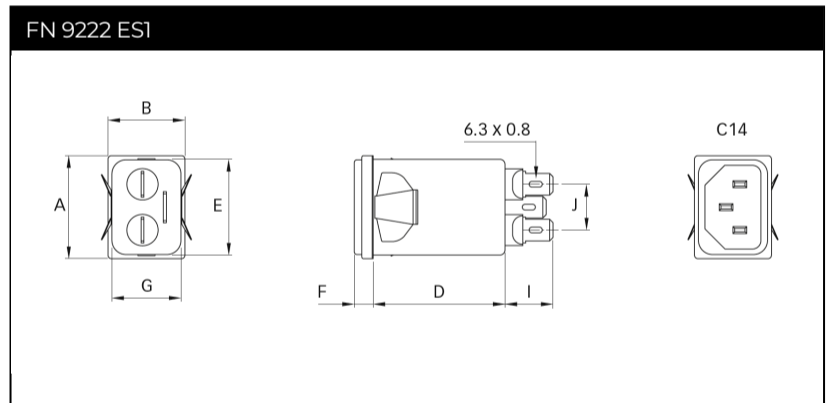
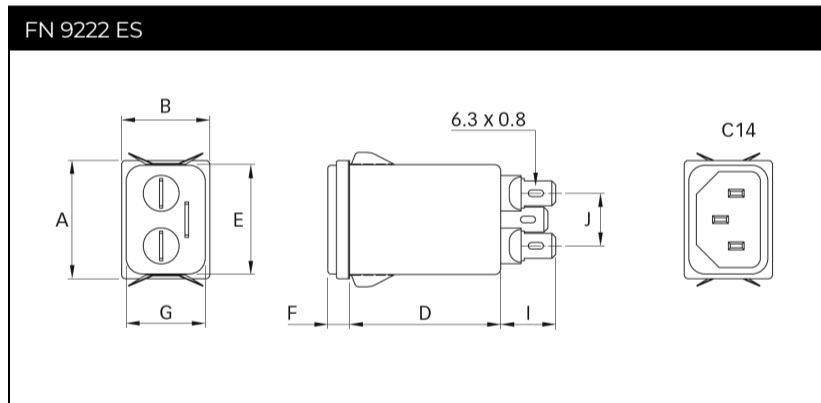
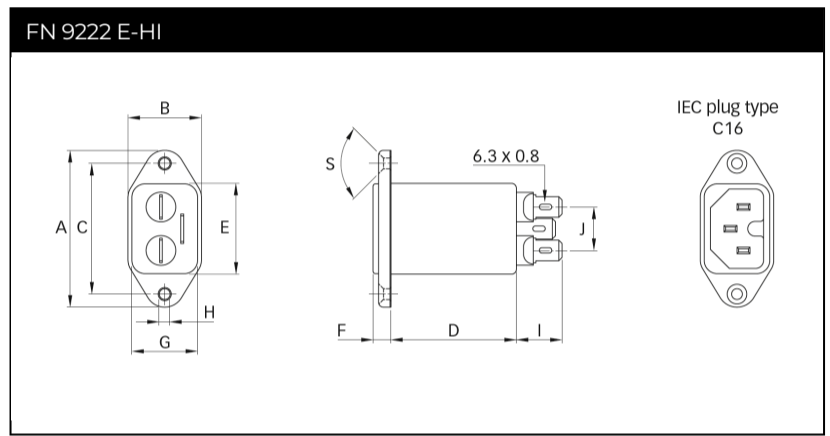
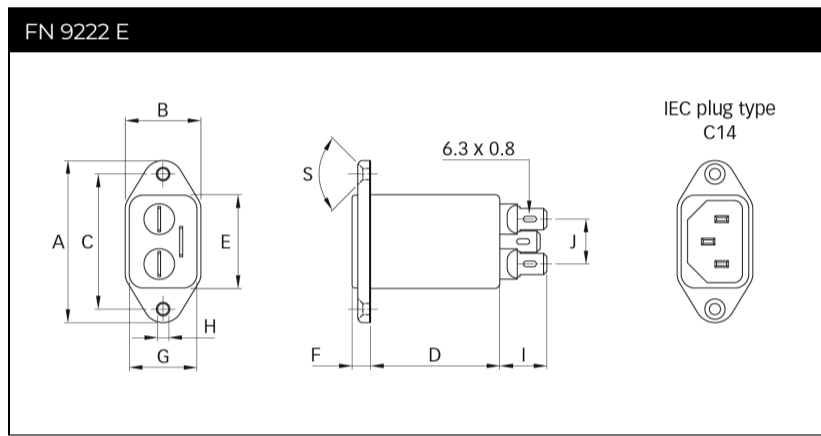
1 and 3 A types

6 to 10 A types

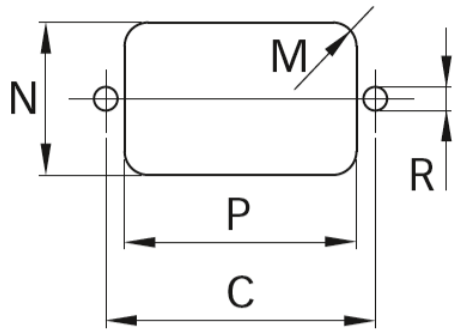
12 and 15 A types



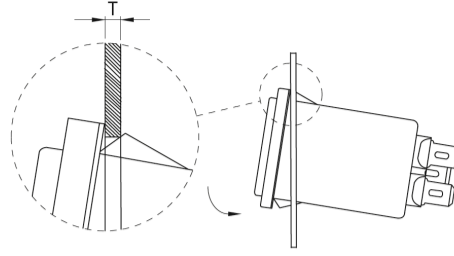
Mechanical Data



Panel cut out



Installation



Dimensions

	FN 9222 E	FN 9222 EU	FN 9222 ES	FN 9222 ES1	FN 9222 E-HI	Tol.
A	48	48	29.9	29.9	48	
B	22.4	25	22.4	22.4	22.4	
C	40	40			40	±0.2
D	47.1	47.1	47.1	47.1	47.1	
E	27.8	27.7	27.8	27.8	27.8	+0.6/-0
F	5.7	5.7	5.7	5.7	5.7	
G	20.1	20.1	20.1	20.1	20.1	+0.6/-0
H	Ø3.3	Ø3.3			Ø3.3	
I	14	14	14	14	14	
J	13.3	13.3	13.3	13.3	13.3	
M	R ≤ 3	R ≤ 3	R ≤ 1.5	R ≤ 1.5	R ≤ 3	
N	21.5	21.5	20.8	21.9	21.5	
P	28.5	28.5	29.4	28.5	28.5	
R*	M3	M3			M3	
S	90°	90°			90°	
T**			0.7 - 1.5	0.7 - 1.5		
T**			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 to find more details on filter connectors.

Accessories

IL 13P IEC C13 Rewireable Connectors with Locking System



IEC
Lock+
REWIREABLE

The locking system has a tensile force of typical 300N. It is recommended to use it with flange mount filters. For details refer to our Application Note "Using IEC Lock Power Cords with IEC Inlets and Filters".

Schaffner power connector with IEC lock guard against accidental disconnection of all electrical appliances with an IEC inlet. No exchange or modification of the IEC inlet or IEC inlet filter system is needed. Easy retrofit .for all electronic equipments and devices

[Technical Data Sheet >](#)

IL 13P IEC C13 Rewireable Angled Connectors with Locking System



- Protects appliances that are vulnerable to vibration
- Connector cannot be accidentally pulled or vibrated out of the inlet
- Space availability/constraints
- Different angles for ease of access
- Space saving
- Release locking mechanism
- Prevents accidental disconnection

[Technical Data Sheet >](#)

Power Cord with angled Locking System C13



- Protects appliances that are vulnerable to vibration
- Connector cannot be accidentally pulled or vibrated out of the inlet
- Space availability/constraints
- Different angles for ease of access
- Space saving
- Release locking mechanism
- Prevents accidental disconnection

[Technical Data Sheet >](#)

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