



IEC Inlet Filters / Power Entry Modules FN 9222E

General Performance IEC Inlet Filter with Earth Line Choke

SCHAFNER
energy efficiency and reliability



- Rated currents up to 15A
- Excellent performance/size ratio
- Integrated earth line choke
- Optional medical versions (B type)
- Snap-in versions (S and S1 type)
- Optional wide mounting flanges

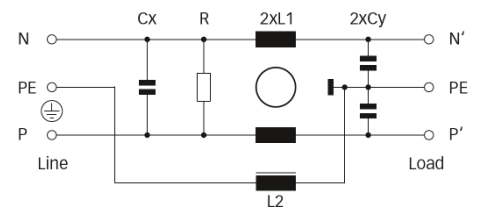
Approvals



Technical specifications

Approvals by rated current :	1 to 10A (ENEC, CQC)
	1 to 15A (UL, CSA)
Datasheet Image:	FN_9222EB_white_01.jpg
Design corresponding to :	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
Flammability corresponding to:	UL 94V-2 or better
High potential test voltage :	P → PE 2000VAC for 2 sec (standard types)
	P → PE 2500VAC for 2 sec (B types)
	P → N 1000VAC for 2 sec
Maximum continuous operating voltage :	250VAC, 50/60Hz
MTBF @ 40 °C/230V (Mil-HB-217F) :	1,610,000 hours
Operating frequency:	dc to 400Hz
Performance indicators:	FN9222E.jpg
Protection category :	IP40 according to IEC 60529
Rated currents :	1 to 15 A @ 50 °C max.
Temperature range (operation and storage) :	-25 °C to +85 °C (25/85/21)

Typical electrical schematic



The FN 9222E 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 9222E 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.

Features and benefits

- Exceptional conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior.
- Rear/front or snap-in mounting.
- Optional medical versions (B type) comply with the requirements of 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

Filter selection table

Filter	Rated current @ 50°C (25°C)	Leakage current* @ 250VAC/50Hz	Inductance		Capacitance		Resistance	Output connections	Weight
	[A]	[μA]	L1 [mH]	L2 [mH]	Cx [μF]	Cy [nF]	R [kΩ]		
FN 9222Ex-1-06	1 (1.2)	373	12	0.4	0.1	2.2		-06	46
FN 9222Ex-3-06	3 (3.5)	373	2.5	0.4	0.1	2.2		-06	46
FN 9222Ex-6-06	6 (7.2)	373	0.78	0.4	0.1	2.2		-06	46
FN 9222Ex-8-06	8 (10.6)	373	0.5	0.4	0.1	2.2		-06	46
FN 9222Ex-10-06	10 (11.6)	373	0.225	0.1	0.1	2.2		-06	46
FN 9222Ex-12-06	12 (12)	373	0.11	0.1	0.1	2.2		-06	46
FN 9222Ex-15-06	15 (15)	373	0.075	0.1	0.1	2.2		-06	46
FN 9222Ex-12-06HI	12 (12)	373	0.11	0.1	0.1	2.2		-06	46
FN 9222Ex-15-06HI	15 (15)	373	0.075	0.1	0.1	2.2		-06	46
FN 9222ExR-1-06	1 (1.2)	373	12	0.4	0.1	2.2	1000	-06	46
FN 9222ExR-3-06	3 (3.5)	373	2.5	0.4	0.1	2.2	1000	-06	46
FN 9222ExR-6-06	6 (7.2)	373	0.78	0.4	0.1	2.2	1000	-06	46
FN 9222ExR-8-06	8 (10.6)	373	0.5	0.4	0.1	2.2	1000	-06	46
FN 9222ExR-10-06	10 (11.6)	373	0.225	0.1	0.1	2.2	1000	-06	46
FN 9222ExR-12-06	12 (12)	373	0.11	0.1	0.1	2.2	1000	-06	46
FN 9222ExR-15-06	15 (15)	373	0.075	0.1	0.1	2.2	1000	-06	46
FN 9222ExR-12-06HI	12 (12)	373	0.11	0.1	0.1	2.2	1000	-06	46
FN 9222ExR-15-06HI	15 (15)	373	0.075	0.1	0.1	2.2	1000	-06	46
FN 9222ExB-1-06	1 (1.2)	2	12	0.4	0.1		1000	-06	46
FN 9222ExB-3-06	3 (3.5)	2	2.5	0.4	0.1		1000	-06	46
FN 9222ExB-6-06	6 (7.2)	2	0.78	0.4	0.1		1000	-06	46
FN 9222ExB-8-06	8 (10.6)	2	0.5	0.4	0.1		1000	-06	46
FN 9222ExB-10-06	10 (11.6)	2	0.225	0.1	0.1		1000	-06	46
FN 9222ExB-12-06	12 (12)	2	0.11	0.1	0.1		1000	-06	46
FN 9222ExB-15-06	15 (15)	2	0.075	0.1	0.1		1000	-06	46
FN 9222ExB-12-06HI	12 (12)	2	0.11	0.1	0.1		1000	-06	46
FN 9222ExB-15-06HI	15 (15)	2	0.075	0.1	0.1		1000	-06	46

* Maximum leakage under normal operating conditions. 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

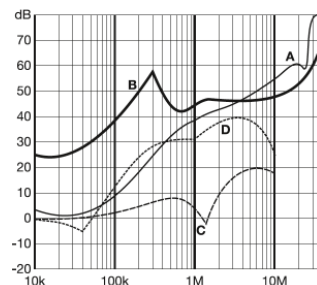
 S1: Snap-in version, snapper on horizontal side

For example: FN 9222E-15-06, FN 9222ES1B-10-06-20, FN 9222ER-12-06HI, FN 9222EUB-8-06-20

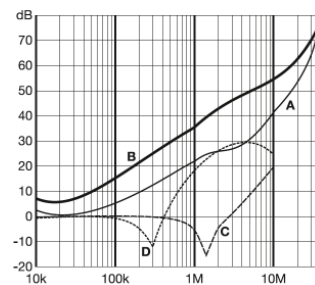
Typical filter attenuation

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

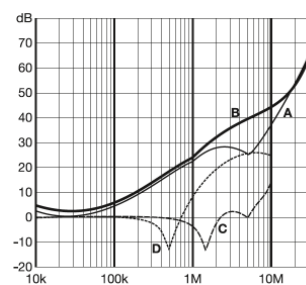
1 and 3A types



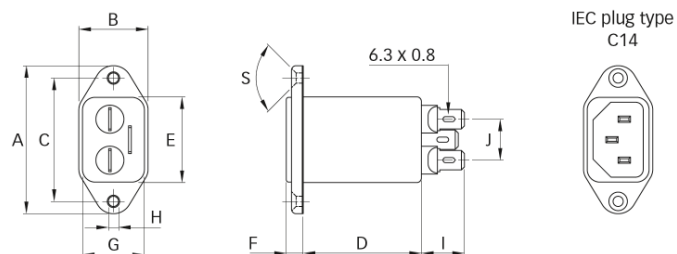
6 to 10A types



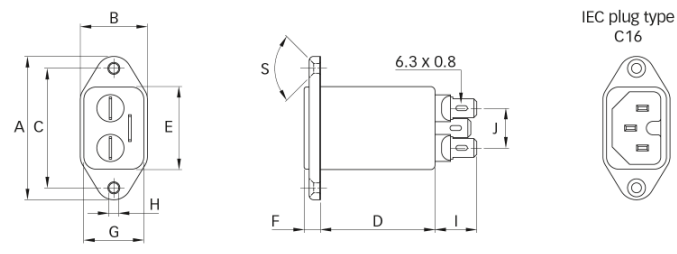
12 and 15A types

**Mechanical data**

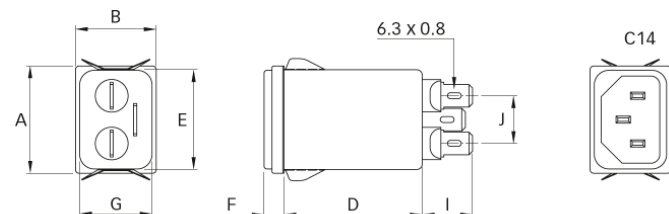
FN 9222E



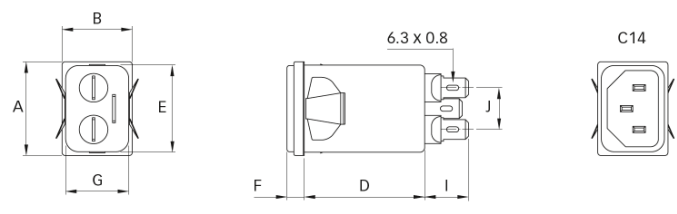
FN 9222E-HI



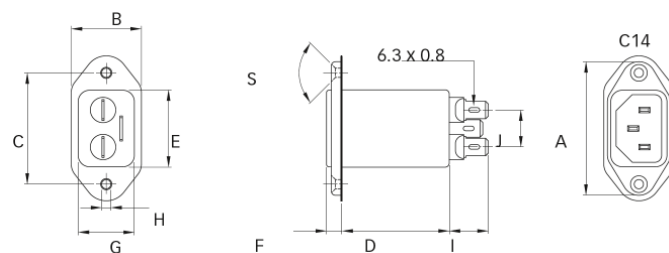
FN 9222ES



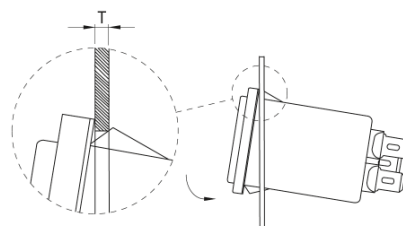
FN 9222ES1



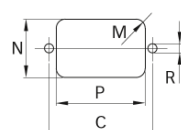
FN 9222EU



Installation



Panel cut out



Dimensions

	FN 9222E	FN 9222EU	FN 9222ES	FN 9222ES1	FN 9222E-HI
A	48	53	29.9	29.9	48
B	22.5	25	22.4	22.4	22.5
C	40 ±0.2	40 ±0.2			40 ±0.2
D	46.8	46.8	46.8	46.8	46.8
E	27.8	27.8	27.8	27.8	27.8
F	5.5	5.5	5.5	5.5	5.5
G	20.1	20.1	20.1	20.1	20.1
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	

* For selecting the panel thickness, please refer to the filter selector table.
All dimensions in mm; 1 inch = 25.4mm
Tolerances according: ISO 2768-m / EN 22768-m

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