

General Performance IEC Inlet Filter



- Rated currents up to 20 A
- Excellent performance/size ratio
- Optional medical versions (B type) according to IEC/EN 60601-1
- Snap-in versions (S and S1 type)
- Hot inlet versions (HI type)
- Optional overvoltage protection (Z type)



Performance indicators

Attenuation performance



Rated current [A]



Technical specifications

Maximum continuous operating voltage	250 VAC, 50/60 Hz
Operating frequency	dc to 400 Hz
Rated currents	1 to 20 A @ 50°C
Approvals by rated current	1 to 10 A (ENEC, CQC) 16 A (ENEC, CQC) for 16 and 20 A types 1 to 20 A (UL, CSA)
High potential test voltage	P → PE 2000 VAC for 2 sec (standard types) P → N 250 VAC for 2 sec (all Z types) P → N 1000 VAC for 2 sec (1 to 10 A types, not Z types) P → PE 2500 VAC for 2 sec (B types) P → N 1100 VDC for 2 sec (16 and 20 A types, not Z types)
Protection category	IP 40 according to IEC 60529
Temperature range (operation and storage)	-25°C to +85°C (25/85/21)
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939 (X to XX A, not Z types)
Flammability corresponding to	UL 94 V-2 or better
Surge pulse protection (optional)	2 kV, IEC 61000-4-5
MTBF @ 40°C/230 V (Mil-HB-217F)	≤15 A: 3,040,000 hours ≥16 A: 2,256,000 hours

Approvals



(CQC except HI-types)

The FN 9222 IEC inlet filter combines an IEC inlet and mains filter with excellent filter attenuation in a small form factor. Choosing the FN 9222 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
- Wide mounting flanges available
- Optional medical versions (B type) comply with the requirements of IEC/EN 60601-1 for creepage and clearance, leakage current and high potential testing
- 12 and 15 A types with hot inlet available
- Optional surge pulse protection
- Different output connections offering maximum flexibility for assembly
- 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* @ 250 VAC/50 Hz	Inductance L	Capacitance		Resistance R	Output connections		Weight
	[A]	[µA]	[mH]	Cx [µF]	Cy [nF]	[kΩ]			[g]
FN 9222 x-1-..	1 (1.2)	373	12	0.1	2.2		-06	-07	40
FN 9222 x-3-..	3 (3.5)	373	2.5	0.1	2.2		-06	-07	40
FN 9222 x-6-..	6 (7.2)	373	0.78	0.1	2.2		-06	-07	40
FN 9222 x-8-..	8 (10.6)	373	0.5	0.1	2.2		-06	-07	40
FN 9222 x-10-..	10 (11.6)	373	0.225	0.1	2.2		-06	-07	40
FN 9222 x-12-..	12 (12)	373	0.11	0.1	2.2		-06	-07	40
FN 9222 x-15-..	15 (15)	373	0.075	0.1	2.2		-06	-07	40
FN 9222 x-12-..HI	12 (12)	373	0.11	0.1	2.2		-06	-07	40
FN 9222 x-15-..HI	15 (15)	373	0.075	0.1	2.2		-06	-07	40
FN 9222 xR-1-..	1 (1.2)	373	12	0.1	2.2	1000	-06	-07	40
FN 9222 xR-3-..	3 (3.5)	373	2.5	0.1	2.2	1000	-06	-07	40
FN 9222 xR-6-..	6 (7.2)	373	0.78	0.1	2.2	1000	-06	-07	40
FN 9222 xR-8-..	8 (10.6)	373	0.5	0.1	2.2	1000	-06	-07	40
FN 9222 xR-10-..	10 (11.6)	373	0.225	0.1	2.2	1000	-06	-07	40
FN 9222 xR-12-..	12 (12)	373	0.11	0.1	2.2	1000	-06	-07	40
FN 9222 xR-15-..	15 (15)	373	0.075	0.1	2.2	1000	-06	-07	40
FN 9222 R-16-06	16 (18.5)	373	0.54	0.33	2.2	1000	-06		100
FN 9222 R-20-06	20 (23)	373	0.4	0.33	2.2	1000	-06		100
FN 9222 xR-12-..HI	12 (12)	373	0.11	0.1	2.2	1000	-06	-07	40
FN 9222 xR-15-..HI	15 (15)	373	0.075	0.1	2.2	1000	-06	-07	40
FN 9222 xB-1-..	1 (1.2)	2	12	0.1		1000	-06	-07	40
FN 9222 xB-3-..	3 (3.5)	2	2.5	0.1		1000	-06	-07	40
FN 9222 xB-6-..	6 (7.2)	2	0.78	0.1		1000	-06	-07	40
FN 9222 xB-8-..	8 (10.6)	2	0.5	0.1		1000	-06	-07	40
FN 9222 xB-10-..	10 (11.6)	2	0.225	0.1		1000	-06	-07	40
FN 9222 xB-12-..	12 (12)	2	0.11	0.1		1000	-06	-07	40
FN 9222 xB-15-..	15 (15)	2	0.075	0.1		1000	-06	-07	40
FN 9222 RB-16-06	16 (18.5)	2	0.54	0.33		1000	-06		100
FN 9222 RB-20-06	20 (23)	2	0.4	0.33		1000	-06		100
FN 9222 xB-12-..HI	12 (12)	2	0.11	0.1		1000	-06	-07	40
FN 9222 xB-15-..HI	15 (15)	2	0.075	0.1		1000	-06	-07	40
FN 9222 UZ-1-06	1 (1.2)	373	12	0.1	2.2		-06		43
FN 9222 UZ-3-06	3 (3.5)	373	2.5	0.1	2.2		-06		43
FN 9222 UZ-6-06	6 (7.2)	373	0.78	0.1	2.2		-06		43
FN 9222 UZ-8-06	8 (10.6)	373	0.5	0.1	2.2		-06		43
FN 9222 UZ-10-06	10 (11.6)	373	0.225	0.1	2.2		-06		43
FN 9222 UZ-12-06	12 (12)	373	0.11	0.1	2.2		-06		43
FN 9222 UZ-15-06	15 (15)	373	0.075	0.1	2.2		-06		43

* Maximum leakage under normal operating conditions. Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

Product selector

FN 9222xx-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 (1 to 15A types), C20 (16 and 20A types)

HI: Hot IEC inlet type C16 (12 and 15A types only)

06: Faston 6.3 x 0.8mm (spade/soldering)

07: Wire leads

1 to 20: Rated current

Blank: Standard version

R: Bleed resistor

B: Medical version (with bleed resistor and without Y2-capacitor)

Z: Optional surge pulse protection with additional varistor (MOV)

(Z types have longer housings, only available for FN 9222UZ-yy-06)

 Blank: Standard housing with mounting flanges

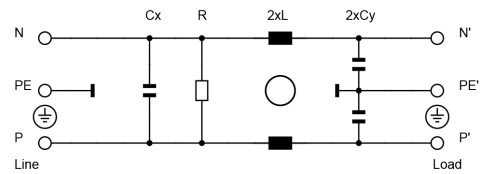
 U: Housing with wider mounting flanges

 S: Snap-in version, snapper on vertical side (1 to 15A types only)

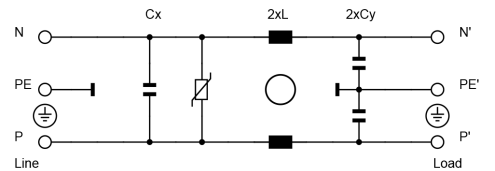
 S1: Snap-in version, snapper on horizontal side (1 to 15A types only)

Typical electrical schematic

Standard, R and B types



Z types

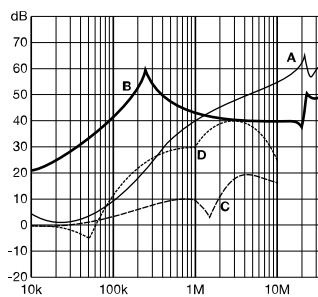


For example: FN 9222 E-15-06, FN 9222 ES1B-10-06-20, FN 9222 ER-12-06HI, FN 9222 EUB-8-06-20

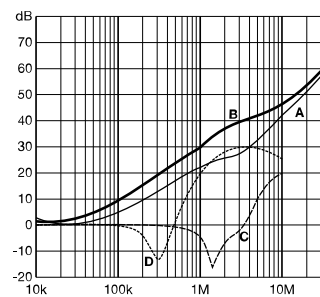
Typical filter attenuation

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

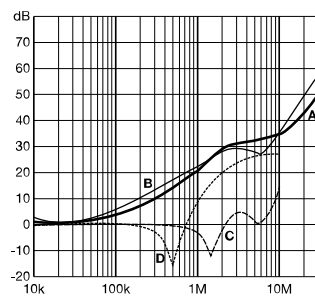
1 and 3 A types



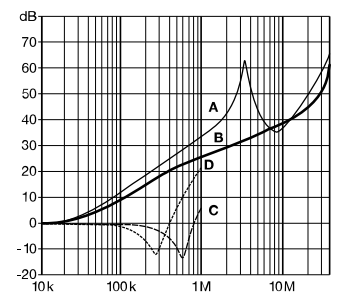
6 to 10 A types



12 and 15 A types

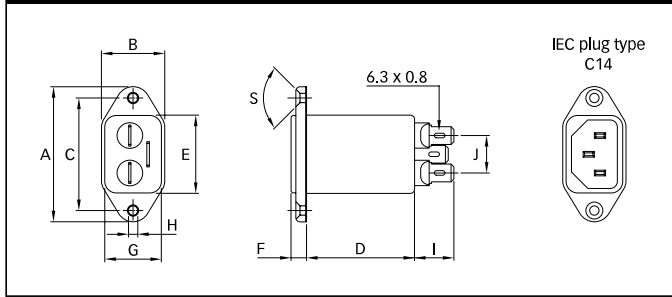


16 and 20 A types

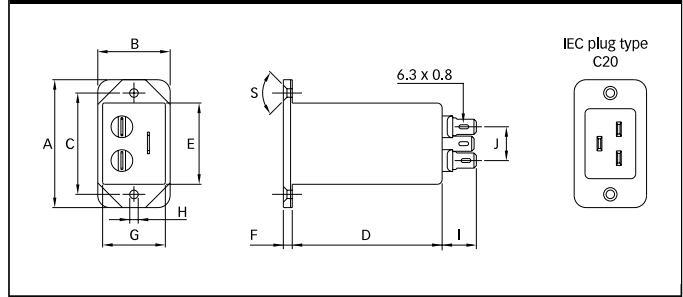


Mechanical data

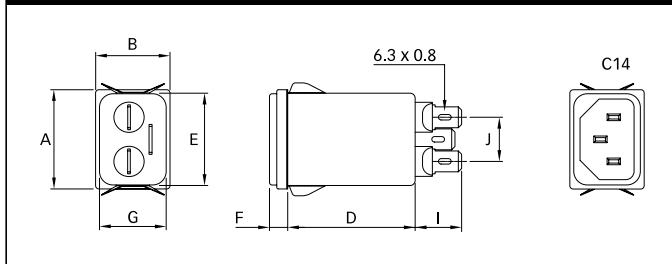
FN 9222 1 to 15 A types



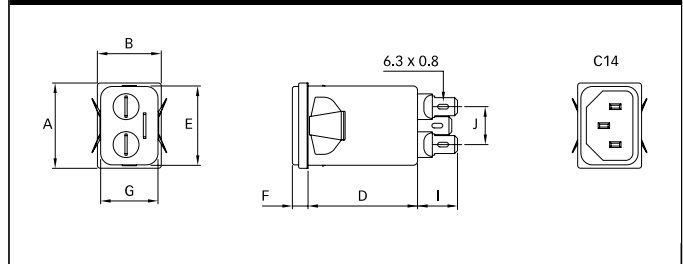
FN 9222, 16 and 20 A types



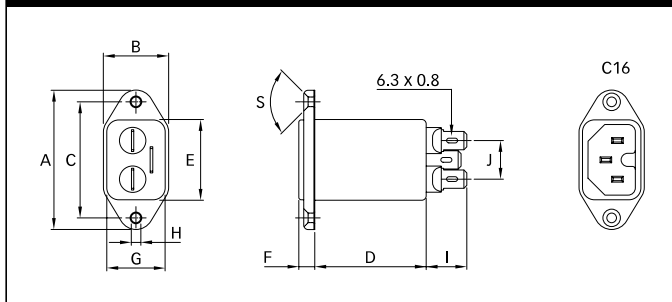
FN 9222 S



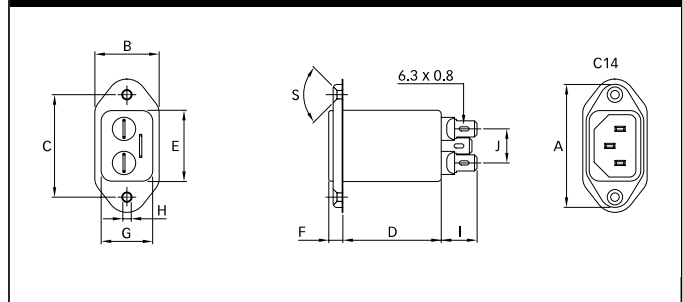
FN 9222 S1



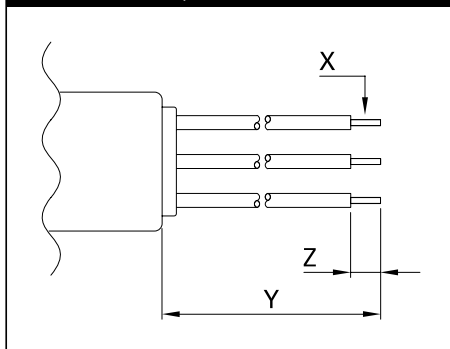
FN 9222-HI



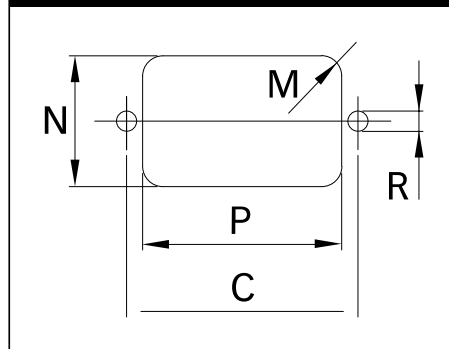
FN 9222 U



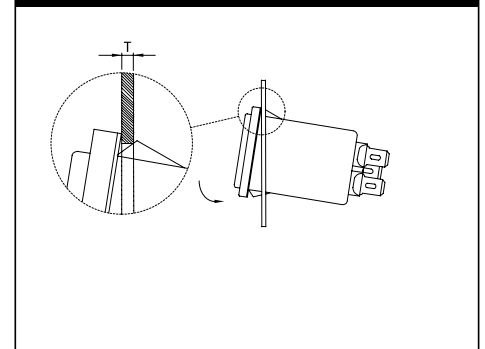
-07 connection style



Panel cut out



Installation



Dimensions

	FN 9222 1 to 8 A	10 to 15 A	16 and 20 A	FN 9222 U	FN 9222 UZ	FN 9222 S 1 to 8 A	10 to 15 A	FN 9222 S1 1 to 8 A	10 to 15 A	FN 9222-HI 12 and 15 A
A	48	48	53	51.85	51.85	29.9	29.9	29.9	29.9	48
B	22.4	22.4	30	25	25	22.4	22.4	22.4	22.4	22.4
C	40 ±0.2	40 ±0.2	42 ±0.2	40 ±0.2	40 ±0.2					40 ±0.2
D	38.25	38.25	62	38.25	46.7	38.25	38.25	38.25	38.25	38.25
E	27.8	27.8	34.5	27.8	27.8	27.9	27.8	27.8	27.8	27.8
F	5.7	5.7	3.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7
G	20.1	20.1	26.5	20.1	20.5	20.1	20.1	20.1	20.1	20.1
H	Ø3.3	Ø3.3	Ø3.5	Ø3.3	Ø3.3					Ø3.3
I	14	14	14	14	14	14	14	14	14	14
J	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
M	R 3	R ≤3	R ≤3	R ≤3	R ≤3	R ≤1.5	R ≤ 1.5	R ≤1.5	R ≤1.5	R ≤3
N	21.5	21.5	27	21.5	21.5	20.8	20.8	21.9	21.9	21.5
P	28.5	28.5	34.7	28.5	28.5	29.4	29.4	28.5	28.5	28.5
R	M3	M3	M3	M3	M3					M3
S	90°	90°	90°	90°	90°					90°
T*						0.7-1.5	0.7-1.5	0.7-1.5	0.7-1.5	
T*						1.5-2.2	1.5-2.2	1.5-2.2	1.5-2.2	
X	AWG 18	AWG 16				AWG 18	AWG 16	AWG 18	AWG 16	AWG 16
Y	160	160				160	160	160	160	160
Z	6	6				6	6	6	6	6

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.



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