

General Performance IEC Inlet Filter

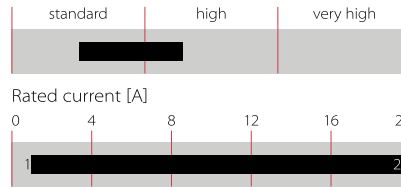


- Rated currents up to 20 A
- Excellent performance/size ratio
- Optional medical versions (B type) according to IEC/EN 60601-1
- Snap-in versions (S and S1 type)
- Hot inlet versions (HI type)
- Optional overvoltage protection (Z type)



Performance indicators

Attenuation performance



Approvals & Compliances



(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

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

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

Technical specifications

Maximum continuous operating voltage

Operating frequency

Rated currents

Approvals by rated current

High potential test voltage

Protection category

Temperature range (operation and storage)

Design corresponding to



Flammability corresponding to

Surge pulse protection (Z type)

MTBF @ 40°C/230 V (Mil-HB-217F)

250 VAC, 50/60 Hz
 DC to 400 Hz
 1 to 20 A @ 50°C
 1 to 10 A (ENEC, CQC)
 16 A (ENEC, CQC) for 16 and 20 A types
 1 to 20 A (UL, CSA)
 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)
 IP 40 according to IEC 60529
 -25°C to +85°C (25/85/21)
 UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939 (X to XX A, not Z types)
 UL 94 V-2 or better
 Helps compliance to IEC61000-4-5 (Differential Mode only)
 ≤15 A: 3,040,000 hours
 ≥16 A: 2,256,000 hours

Filter selection table

Filter	Rated current @ 50°C (25°C)	Leakage current* @ 250 VAC/50 Hz (@ 120 VAC/60 Hz)	Inductance L	Capacitance		Resistance R	Output connections		Weight [g]
				Cx	Cy				
	[A]	[mA]	[mH]	[µF]	[nF]	[kΩ]			
FN 9222 x-1-..	1 (1.2)	0.31 (0.18)	12	0.1	2.2		-06	-07	40
FN 9222 x-3-..	3 (3.5)	0.31 (0.18)	2.5	0.1	2.2		-06	-07	40
FN 9222 x-6-..	6 (7.2)	0.31 (0.18)	0.78	0.1	2.2		-06	-07	40
FN 9222 x-8-..	8 (10.6)	0.31 (0.18)	0.5	0.1	2.2		-06	-07	40
FN 9222 x-10-..	10 (11.6)	0.31 (0.18)	0.225	0.1	2.2		-06	-07	40
FN 9222 x-12-..	12 (12)	0.31 (0.18)	0.11	0.1	2.2		-06	-07	40
FN 9222 x-15-..	15 (15)	0.31 (0.18)	0.075	0.1	2.2		-06	-07	40
FN 9222 x-12-..HI	12 (12)	0.31 (0.18)	0.11	0.1	2.2		-06	-07	40
FN 9222 x-15-..HI	15 (15)	0.31 (0.18)	0.075	0.1	2.2		-06	-07	40
FN 9222 xR-1-..	1 (1.2)	0.31 (0.18)	12	0.1	2.2	1000	-06	-07	40
FN 9222 xR-3-..	3 (3.5)	0.31 (0.18)	2.5	0.1	2.2	1000	-06	-07	40
FN 9222 xR-6-..	6 (7.2)	0.31 (0.18)	0.78	0.1	2.2	1000	-06	-07	40
FN 9222 xR-8-..	8 (10.6)	0.31 (0.18)	0.5	0.1	2.2	1000	-06	-07	40
FN 9222 xR-10-..	10 (11.6)	0.31 (0.18)	0.225	0.1	2.2	1000	-06	-07	40
FN 9222 xR-12-..	12 (12)	0.31 (0.18)	0.11	0.1	2.2	1000	-06	-07	40
FN 9222 xR-15-..	15 (15)	0.31 (0.18)	0.075	0.1	2.2	1000	-06	-07	40
FN 9222 R-16-06	16 (18.5)	0.31 (0.18)	0.54	0.33	2.2	1000	-06		100
FN 9222 R-20-06	20 (23)	0.31 (0.18)	0.4	0.33	2.2	1000	-06		100
FN 9222 xR-12-..HI	12 (12)	0.31 (0.18)	0.11	0.1	2.2	1000	-06	-07	40
FN 9222 xR-15-..HI	15 (15)	0.31 (0.18)	0.075	0.1	2.2	1000	-06	-07	40
FN 9222 xB-1-..	1 (1.2)	0.00	12	0.1		1000	-06	-07	40
FN 9222 xB-3-..	3 (3.5)	0.00	2.5	0.1		1000	-06	-07	40
FN 9222 xB-6-..	6 (7.2)	0.00	0.78	0.1		1000	-06	-07	40
FN 9222 xB-8-..	8 (10.6)	0.00	0.5	0.1		1000	-06	-07	40
FN 9222 xB-10-..	10 (11.6)	0.00	0.225	0.1		1000	-06	-07	40
FN 9222 xB-12-..	12 (12)	0.00	0.11	0.1		1000	-06	-07	40
FN 9222 xB-15-..	15 (15)	0.00	0.075	0.1		1000	-06	-07	40
FN 9222 RB-16-06	16 (18.5)	0.00	0.54	0.33		1000	-06		100
FN 9222 RB-20-06	20 (23)	0.00	0.4	0.33		1000	-06		100
FN 9222 xB-12-..HI	12 (12)	0.00	0.11	0.1		1000	-06	-07	40
FN 9222 xB-15-..HI	15 (15)	0.00	0.075	0.1		1000	-06	-07	40
FN 9222 UZ-1-06	1 (1.2)	0.31 (0.18)	12	0.1	2.2		-06		43
FN 9222 UZ-3-06	3 (3.5)	0.31 (0.18)	2.5	0.1	2.2		-06		43
FN 9222 UZ-6-06	6 (7.2)	0.31 (0.18)	0.78	0.1	2.2		-06		43
FN 9222 UZ-8-06	8 (10.6)	0.31 (0.18)	0.5	0.1	2.2		-06		43
FN 9222 UZ-10-06	10 (11.6)	0.31 (0.18)	0.225	0.1	2.2		-06		43
FN 9222 UZ-12-06	12 (12)	0.31 (0.18)	0.11	0.1	2.2		-06		43
FN 9222 UZ-15-06	15 (15)	0.31 (0.18)	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.

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

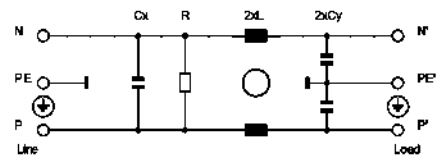
U: Housing with wider mounting flanges

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

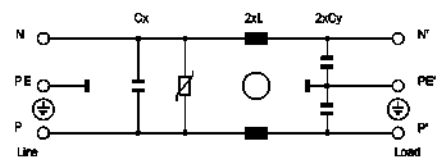
S1: Snap-In version, snapper on horizontal side (1 to 15A types only)

Typical electrical schematic

Standard, R and B types



Z types

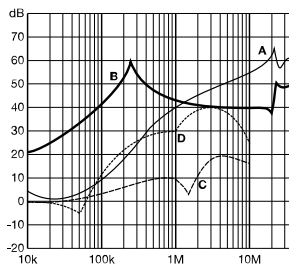


For example: FN 9222 E-15-06, FN 9222 ES1B-10-06-20, FN 9222 ER-12-06HI, FN 9222 EUB-8-06-20

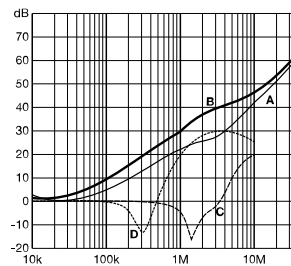
Typical filter attenuation

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

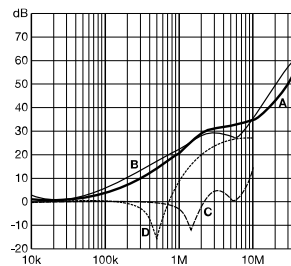
1 and 3 A types



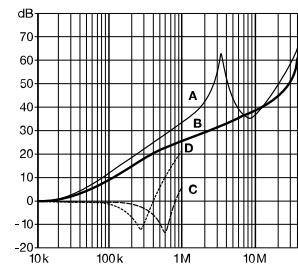
6 to 10 A types



12 and 15 A types



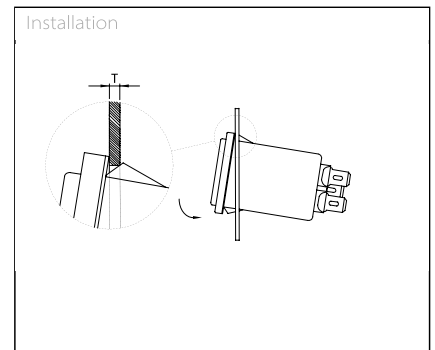
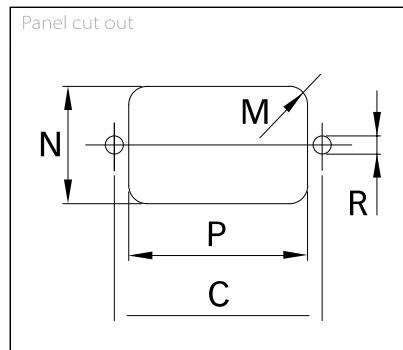
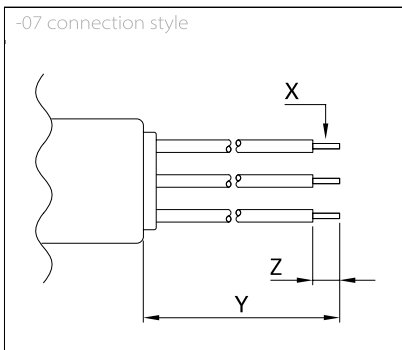
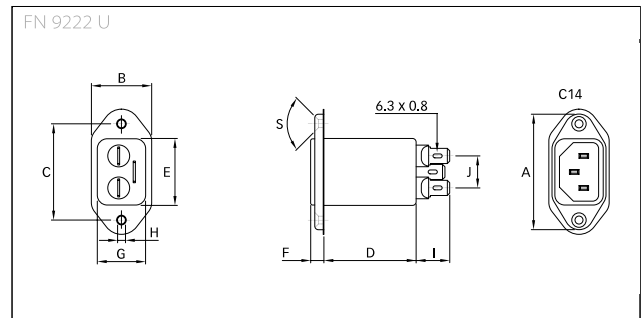
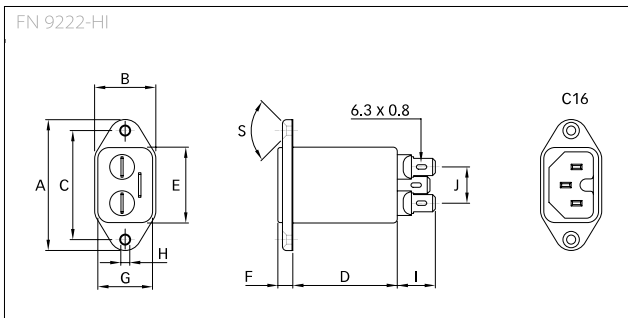
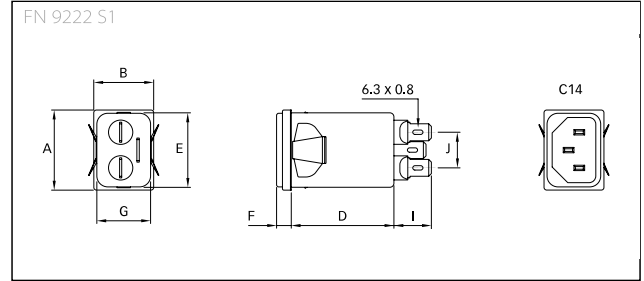
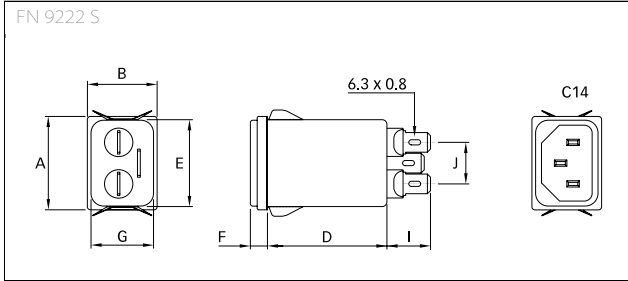
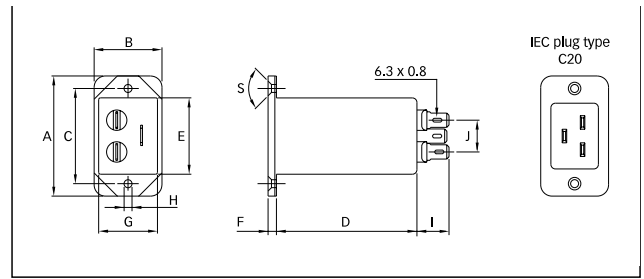
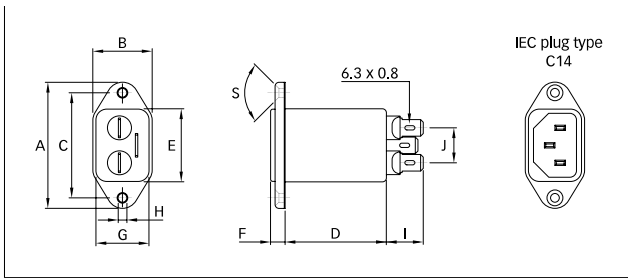
16 and 20 A types



Mechanical data

FN 9222 1 to 15 A types

FN 9222, 16 and 20 A types



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	Tol.
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	FN 9222			FN 9222 U	FN 9222 UZ	FN 9222 S		FN 9222 S1		FN 9222-HI	Tol.
	1 to 8 A	10 to 15 A	16 and 20 A			1 to 8 A	10 to 15 A	1 to 8 A	10 to 15 A	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	40	42	40	40					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	27.7	27.7	27.8	27.8	27.8	27.8	27.8	+0.6/-0
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	20.1	20.1	20.1	20.1	20.1	20.1	+0.6/-0
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 ≤1.5	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	

*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 for IEC Inlet Filters and Power Entry Modules

The accessories displayed are a selection of available accessories for IEC Inlet filters and IEC Power entry modules. As they are displayed in a general way there might be variants of the filters where the accessories are not available.

For further information please ask your local Schaffner Sales Partner and visit our homepage <https://www.schaffner.com/>.

The locking system has a tensile force of typical 200N.

The locking system has a tensile force of typical 300N. It is recommended to

Power Cord with Locking System for Inlet Filters IL 13, IL 13 P, IL 19



Link to Datasheet: [Datasheet IEC C13/C19 locking cable](#)

It is recommended to use it with flange mount filters. Lock Power Cords with IEC Inlets and Filters" Schaffner power cords 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.

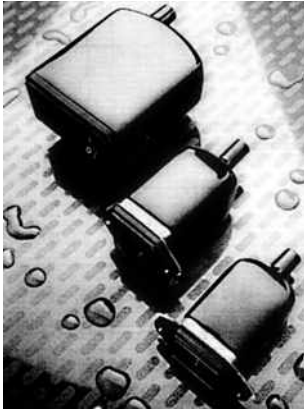
IEC C13 Rewireable Connector for individual Power Cord with Locking System



Link to Datasheet: [Datasheet IEC C13 rewireable](#)

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.

IB - Insulating Boots



There is a full range of insulating boots available from Schaffner that provide a physical cover for the exposed terminals on the back of IEC Inlet Filters. These boots fit the simplest non-fused and unswitched style up to the fully fused and switched IEC filtered inlet. The boots are made from a durable black PVC material that conforms to UL94-V0 flammability requirements. The boots slip easily over the back of the filter and reduce the risk of electrical shock to maintenance personnel whilst protecting the filter from environmental hazard such as the ingress of dust and moisture.



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