

IEC inlet filters FN 9233

High performance IEC inlet filter

SCHAFFNER

safety for electronic systems



- Rated currents up to 15A
- Excellent attenuation performance
- Optional earth line choke
- Optional medical versions (B type)
- Snap-in versions (S and S1 type)
- Hot inlet versions (HI type)

Approvals



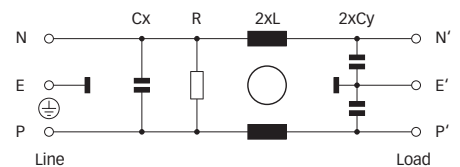
(CQC approval pending)



Technical specifications

Maximum continuous operating voltage:	250VAC, 50/60Hz
Operating frequency:	dc to 400Hz
Rated currents:	1 to 10A @ 50°C max. (for ENEC) 1 to 15A @ 50°C max. (for UL, CSA, CQC)
High potential test voltage:	P → E 2000VAC for 2 sec (standard types) P → E 2500VAC for 2 sec (B types) P → N 1000VAC for 2 sec
Protection category:	IP40 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, EN 60939
Flammability corresponding to:	UL 94V-2 or better
MTBF @ 40°C/230V (Mil-HB-217F):	28,090,000 hours

Typical electrical schematic



The FN 9233 IEC inlet filter combines an excellent IEC inlet and mains filter with excellent filter attenuation in a small form factor. Choosing the FN 9233 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. For types with additional earth line choke please consult the FN 9233E data sheet.


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 earth line choke see FN 9233E data sheet.
- Optional low leakage currents for medical applications.
- Wide mounting flanges available.
- 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 systems
- Rack mounting equipment

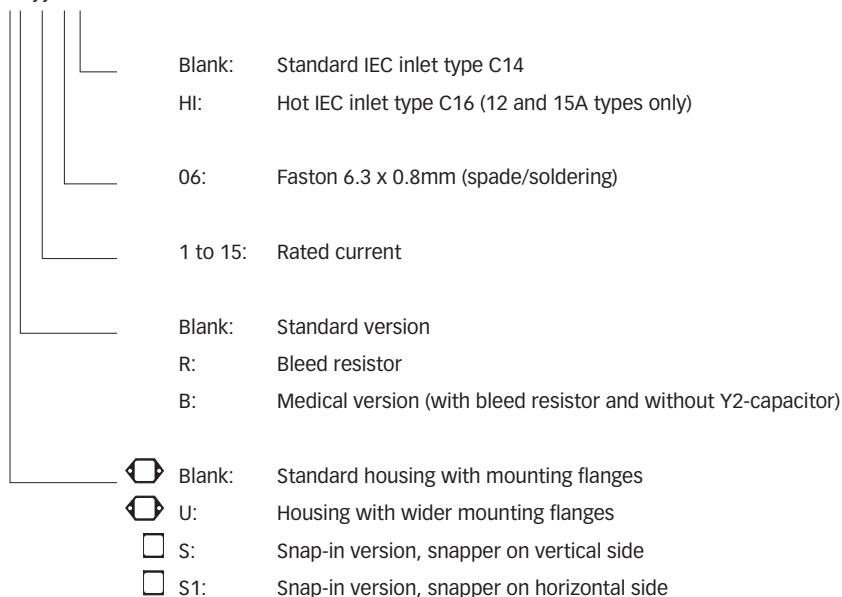
Filter selection table

Filter	Rated current @ 40°C (25°C)	Leakage current* @ 250VAC/50Hz	Inductance L	Capacitance Cx Cy		Resistance R	Output connections	Weight
	[A]	[µA]	[mH]	[µF]	[nF]	[kΩ]		[g]
FN 9233x-1-06	1 (1.2)	373	22.5	0.1	2.2		-06	37
FN 9233x-3-06	3 (3.5)	373	4.6	0.1	2.2		-06	37
FN 9233x-6-06	6 (7.2)	373	1.6	0.1	2.2		-06	37
FN 9233x-8-06	8 (10.6)	373	0.9	0.1	2.2		-06	37
FN 9233x-10-06	10 (11.6)	373	0.45	0.1	2.2		-06	37
FN 9233x-12-06	12 (12)	373	0.27	0.1	2.2		-06	37
FN 9233x-15-06	15 (15)	373	0.2	0.1	2.2		-06	37
FN 9233x-12-06HI	12 (12)	373	0.27	0.1	2.2		-06	37
FN 9233x-15-06HI	15 (15)	373	0.2	0.1	2.2		-06	37
FN 9233xR-1-06	1 (1.2)	373	22.5	0.1	2.2	1000	-06	37
FN 9233xR-3-06	3 (3.5)	373	4.6	0.1	2.2	1000	-06	37
FN 9233xR-6-06	6 (7.2)	373	1.6	0.1	2.2	1000	-06	37
FN 9233xR-8-06	8 (10.6)	373	0.9	0.1	2.2	1000	-06	37
FN 9233xR-10-06	10 (11.6)	373	0.45	0.1	2.2	1000	-06	37
FN 9233xR-12-06	12 (12)	373	0.27	0.1	2.2	1000	-06	37
FN 9233xR-15-06	15 (15)	373	0.2	0.1	2.2	1000	-06	37
FN 9233xR-12-06HI	12 (12)	373	0.27	0.1	2.2	1000	-06	37
FN 9233xR-15-06HI	15 (15)	373	0.2	0.1	2.2	1000	-06	37
FN 9233xB-1-06	1 (1.2)	2	22.5	0.1		1000	-06	37
FN 9233xB-3-06	3 (3.5)	2	4.6	0.1		1000	-06	37
FN 9233xB-6-06	6 (7.2)	2	1.6	0.1		1000	-06	37
FN 9233xB-8-06	8 (10.6)	2	0.9	0.1		1000	-06	37
FN 9233xB-10-06	10 (11.6)	2	0.45	0.1		1000	-06	37
FN 9233xB-12-06	12 (12)	2	0.27	0.1		1000	-06	37
FN 9233xB-15-06	15 (15)	2	0.2	0.1		1000	-06	37
FN 9233xB-12-06HI	12 (12)	2	0.27	0.1		1000	-06	37
FN 9233xB-15-06HI	15 (15)	2	0.2	0.1		1000	-06	37

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

Product selector

FN 9233xx-yy-..HI

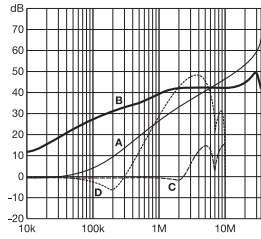


For example: FN 9233-15-06, FN 9233S1B-10-06, FN 9233R-12-06HI, FN 9233UB-8-06

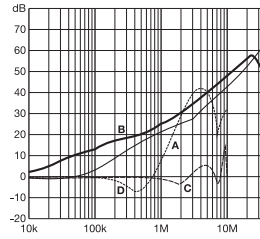
Typical filter attenuation

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

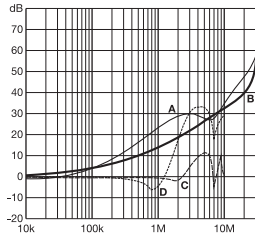
1 and 3A types



6 to 10A types

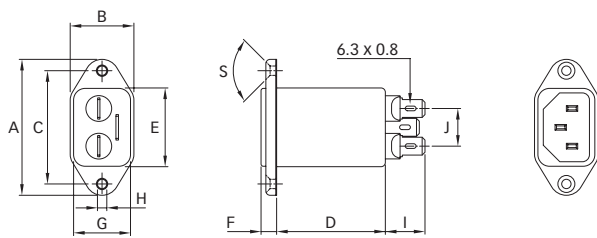


12 and 15A types

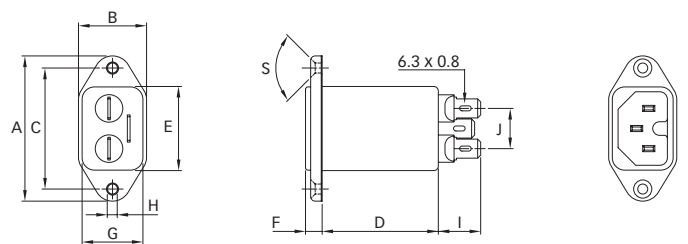


Mechanical data

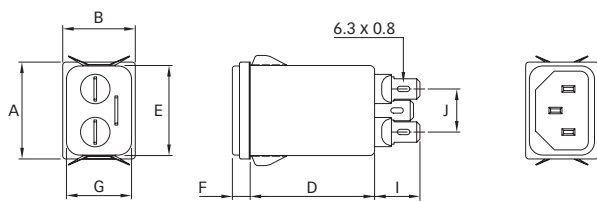
FN 9233



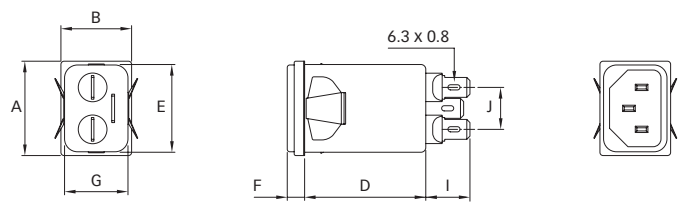
FN 9233-HI



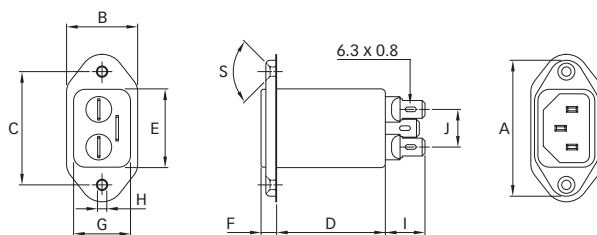
FN 9233S



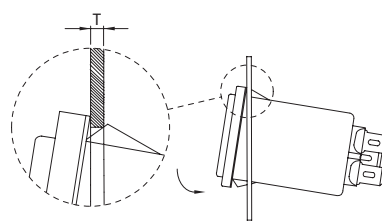
FN 9233S1



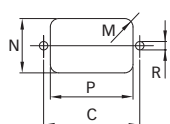
FN 9233U



Installation



Panel cut out



Dimensions

	FN 9233 1 to 6A	10 to 15A	FN 9233U 1 to 6A	10 to 15A	FN 9233S 1 to 6A	10 to 15A	FN 9233S1 1 to 6A	10 to 15A	FN 9233-HI 12 and 15A
A	48	48	51.85	51.85	29.9	29.9	29.9	29.9	48
B	22.5	22.5	25	25	22.4	22.4	22.4	22.4	22.5
C	40	40	40	40					40
D	38.4	38.4	38.25	38.25	38.4	38.4	38.4	38.4	38.4
E	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
F	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
G	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
H	Ø3.3	Ø3.3	Ø3.3	Ø3.3					Ø3.3
I	14	14	14.1	14.1	14	14	14	14	14
J	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 ≤ 1.5	R ≤ 1.5	R ≤ 1.5	R ≤ 1.5	R ≤ 3
N	21.5	21.5	21.5	21.5	20.8	20.8	21.9	21.9	21.5
P	28.5	28.5	28.5	28.5	29.4	29.4	28.5	28.5	28.5
R	M3	M3	M3	M3					M3
S	90°	90°	90°	90°					90°
T					0.6 - 2	0.6 - 2	0.6 - 2	0.6 - 2	

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