schaffner
energy efficiency and reliability

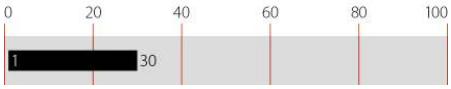
General Purpose EMI Filter with High Attenuation Performance

- Rated currents from 1 to 30 A
- High performance filter attenuation
- High differential-mode attenuation
- Optional medical versions (B type)
- Optional safety versions (A type)
- Optional overvoltage protection (Z type)

Performance indicators

Attenuation performance

Rated current [A]



Technical specifications

Operating voltage	110/250 VAC, 50/60 Hz
Operating frequency	dc to 400 Hz
Rated currents	1 to 30 A @ 40 °C max.
High potential test voltage	P –> PE 2000 VAC for 2 sec (standard types) P –> N 1100 VDC for 2 sec P –> PE 2500 VAC for 2 sec (B types)
Temperature range (operation and storage)	-25 °C to +100 °C (25/100/21)
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
Flammability corresponding to	UL 94 V-2 or better
Surge pulse protection (optional)	2kV, IEC 61000-4-5
MTBF @ 40°C/230V (Mil-HB-217F)	2,200,000 hours (1 to 10 A types) 1,200,000 hours (12 to 30 A types)

Approvals

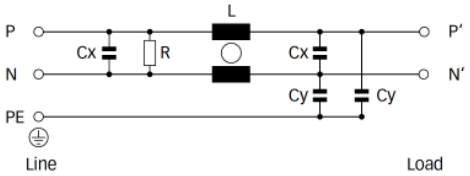
Features and benefits

- FN 2030 filters are designed for easy and fast chassis mounting
- The FN 2030 filters are also available as B versions with no Y-capacitors for medical applications as well as A versions with low capacitance for safety critical applications with a requirement for low leakage currents
- All filters provide an exceptional conducted attenuation performance, based on chokes with high permeable core material and excellent thermal behavior
- The higher inductivity versus amperage offers increased attenuation performance with same form factor compared to FN 2010 and FN 2020 filter series
- All FN 2030 filters can be delivered with optional surge pulse protection. FN 2030 filters are also available as two- stage filters (FN 2090 series) for very noisy environment
- Various terminal options allow you to select the desired connection style

Typical application

- Electrical and electronic equipment
- Consumer goods
- Household equipment
- Medical equipment
- Electronic data processing equipment
- Office automation and datacom equipment
- Various noisy applications requiring high filter performance

Typical electrical schematic



Filter selection table

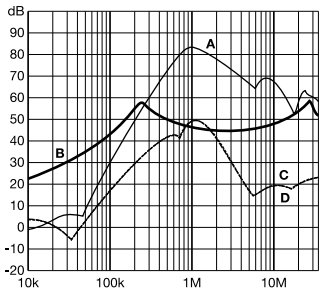
Filter*	Rated current @ 40 °C (25 °C)	Leakage current** @ 230 VAC/50 Hz	Inductance	Capacitance		Resistance	Input/Output connections			Weight
			L	Cx	Cy	R				
	[A]	[mA]	[mH]	[µF]	[nF]	[kΩ]				[g]
FN 2030-1-..	(1.1)	0.34	20	0.22	2.2	1000	-06	-07		58
FN 2030-3-..	3 (3.4)	0.52	14	0.33	3.3	1000	-06	-07		87
FN 2030-4-..	4 (4.5)	0.52	14	0.33	3.3	1000	-06	-07		92
FN 2030-6-..	6 (6.7)	0.73	8	0.47	4.7	680	-06	-07		100
FN 2030-8-..	8 (8.9)	0.73	8	0.47	4.7	680	-06	-07		170
FN 2030-10-..	10 (11.2)	0.73	8	0.47	4.7	680	-06	-07		196
FN 2030-12-..	12 (13.4)	0.87	4	1.0	10	330	-06	-07		185
FN 2030-16-..	16 (17.9)	0.87	4	1.0	10	330	-06	-07		225
FN 2030-20-..	20 (22.4)	0.87	4	1.0	10	330	-06		-08	285
FN 2030-30-08	30 (33.5)	0.87	2	1.0	10	330			-08	326
FN 2030A-1-..	1 (1.1)	0.074	20	0.22	0.47	1000	-06	-07		58
FN 2030A-3-..	3 (3.4)	0.074	14	0.33	0.47	1000	-06	-07		87
FN 2030A-4-..	4 (4.5)	0.074	14	0.33	0.47	1000	-06	-07		92
FN 2030A-6-..	6 (6.7)	0.074	8	0.47	0.47	680	-06	-07		100
FN 2030A-8-..	8 (8.9)	0.074	8	0.47	0.47	680	-06	-07		170
FN 2030A-10-..	10 (11.2)	0.074	8	0.47	0.47	680	-06	-07		196
FN 2030A-12-..	12 (13.4)	0.074	4	1.0	0.47	330	-06	-07		185
FN 2030A-16-..	16 (17.9)	0.074	4	1.0	0.47	330	-06	-07		225
FN 2030A-20-..	20 (22.4)	0.074	4	1.0	0.47	330	-06		-08	285
FN 2030A-30-08	30 (33.5)	0.074	2	1.0	0.47	330			-08	326
FN 2030B-1-..	1 (1.1)	0.002	20	0.22		1000	-06	-07		58
FN 2030B-3-..	3 (3.4)	0.002	14	0.33		1000	-06	-07		87
FN 2030B-4-..	4 (4.5)	0.002	14	0.33		1000	-06	-07		92
FN 2030B-6-..	6 (6.7)	0.002	8	0.47		680	-06	-07		100
FN 2030B-8-..	8 (8.9)	0.002	8	0.47		680	-06	-07		170
FN 2030B-10-..	10 (11.2)	0.002	8.45	0.47		680	-06	-07		196
FN 2030B-12-..	12 (13.4)	0.002	4	1.0		330	-06	-07		185
FN 2030B-16-..	16 (17.9)	0.002	4	1.0		330	-06	-07		225
FN 2030B-20-..	20 (22.4)	0.002	4	1.0		330	-06		-08	285
FN 2030B-30-08	30 (33.5)	0.002	2	1.0		330			-08	326

* To compile a complete part number, please replace the -.. with the required I/O connection style. For surge pulse protection, please add Z (e.g. FN 2030Z-10-06, FN 2030BZ-20-08).
** Maximum leakage under normal operating conditions. Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

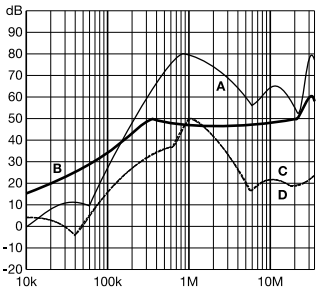
Typical filter attenuation

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

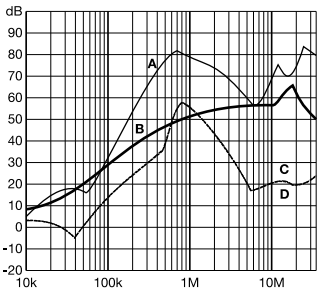
1 to 4 A types



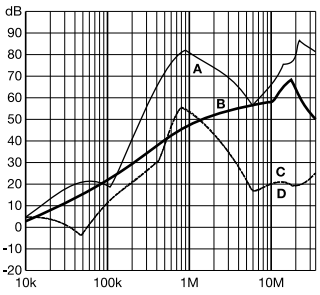
6 to 10 A types



12 to 20 A types

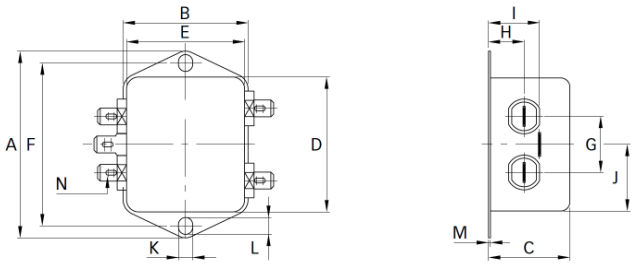


30 A types

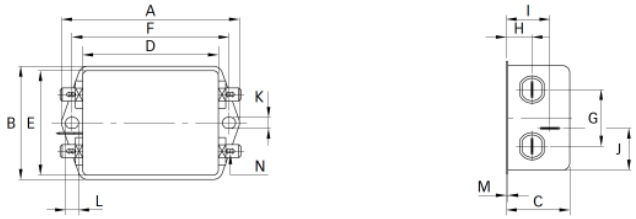


Mechanical data

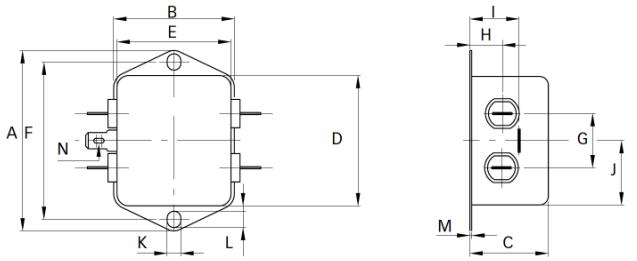
Connection style -06, 1 A types



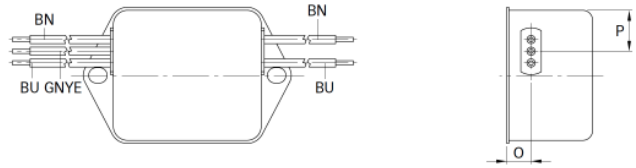
Connection style -06, 8 to 20 A types



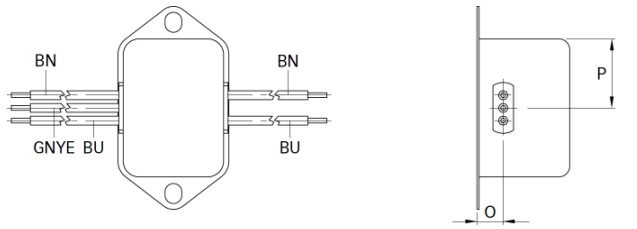
Connection style -06, 3 to 6 A types



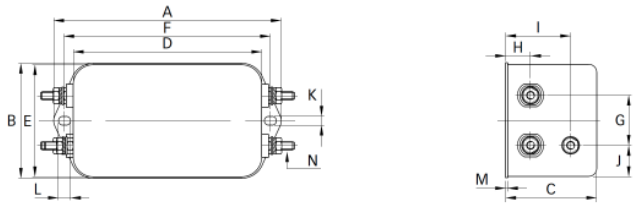
Connection style -07, 8 to 16 A types (same dimensions as style -06)



Connection style -07, 1 to 6 A types (same dimensions as style -06)



Connection style -08, 20 and 30 A types



Dimensions

	1 A	3 A	4 A	6 A	8 A	10 A	12 A	16 A	20 A	30 A	Tolerances
A	64	71	71	71	85	85	85	85	85	85	±0.5
B	35	46.6	46.6	46.6	54	54	54	54	54	54	±0.5
C	24.3	22.3	22.3	22.3	30.3	30.3	30.3	40.3	40.3	40.3	±0.5
D	43.5	50.5	50.5	50.5	64.8	64.8	64.8	64.8	64.8	64.8	±0.5
E	32.5	44.5	44.5	44.5	49.8	49.8	49.8	49.8	49.8	49.8	±0.5
F	54	61	61	61	75	75	75	75	75	75	±0.3
G	21	21	21	21	27	27	27	27	27	27	±0.2
H	9.3	10.8	10.8	10.8	12.3	12.3	12.3	12.3	12.3	12.3	±0.5
I	15.3	16.8	16.8	16.8	20.8	20.8	20.8	29.8	29.8	29.8	±0.5
J	21.8	25.25	25.25	25.25	19.9	19.9	19.9	11.4	11.4	11.4	±0.5
K	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	
L	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	
M	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Connection style -06											
N	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8		
Connection style -07											
O	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3			±0.5
P	21.8	14	14	14	14.9	14.9	14.9	14.9			±0.5
AWG type wire	AWG 20	AWG 20	AWG 20	AWG 18	AWG 18	AWG 18	AWG 16	AWG 16			
Wire length	140	140	140	140	140	140	140	140			
Connection style -08											
N									M4	M4	

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