

# 1-phase Filters FN 2080

## Multi-stage High Performance EMI Filter

**SCHAFFNER**  
energy efficiency and reliability



- Rated currents from 1 to 16A
- High differential and common-mode attenuation
- Good low frequency attenuation
- Optional medical versions (B type)
- Optional safety versions (A type)

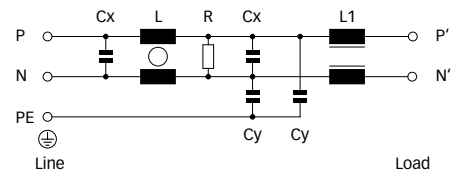
### Approvals



### Technical specifications

Maximum continuous operating voltage:	250VAC, 50/60Hz
Operating frequency:	dc to 400Hz
Rated currents:	1 to 16A @ 40°C max.
High potential test voltage:	P → PE 2000VAC for 2 sec P → PE 2500VAC for 2 sec (B types)
	P → N 1100VDC for 2 sec
Temperature range (operation and storage):	-25°C to +100°C (25/100/21)
Flammability corresponding to:	UL 94V-2 or better
Design corresponding to:	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF @ 40°C/230V (Mil-HB-217F):	1,650,000 hours 1,700,000 hours (B types)

### Typical electrical schematic






### Features and benefits

- FN 2080 two-stage filters are designed for easy and fast chassis mounting.
- FN 2080 filters are also available as B versions without Y-capacitors for medical applications as well as A version with low capacitance for safety critical applications with necessity for low leakage currents.
- All filters provide a high conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior.
- FN 2080 two-stage filters are designed with good low frequency attenuation.
- FN 2080 filters are also available as single-stage filters.
- Various terminal options allow you to select the desired connection style.

### Typical applications

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

Filter selection table

Filter*	Rated current @ 40°C (25°C)	Leakage current** @ 230VAC/50Hz	Inductance		Capacitance		Resistance	Input/Output connections			Weight
	[A]	[mA]	L [mH]	L1 [μH]	Cx [μF]	Cy [nF]	R [kΩ]				[g]
FN 2080-1-..	1 (1.2)	0.734	22	490	0.33	4.7	1000	-06	-07		200
FN 2080-3-..	3 (3.5)	0.734	9.8	160	0.47	4.7	470	-06	-07		270
FN 2080-6-..	6 (6.9)	0.734	7.8	110	1	4.7	220	-06	-07		470
FN 2080-10-..	10 (11.5)	0.734	4.5	60	1	4.7	220	-06	-07		750
FN 2080-12-..	12 (13.8)	0.734	3.25	50	1	4.7	220	-06	-07		750
FN 2080-16-..	16 (18.4)	0.734	2.8	43	1	4.7	220	-06	-07	-08	1020
<hr/>											
FN 2080A-1-..	1 (1.2)	0.074	22	490	0.33	0.47	1000	-06	-07		200
FN 2080A-3-..	3 (3.5)	0.074	9.8	160	0.47	0.47	470	-06	-07		270
FN 2080A-6-..	6 (6.9)	0.074	7.8	110	1	0.47	220	-06	-07		470
FN 2080A-10-..	10 (11.5)	0.074	4.5	60	1	0.47	220	-06	-07		750
FN 2080A-12-..	12 (13.8)	0.074	3.25	50	1	0.47	220	-06	-07		750
FN 2080A-16-..	16 (18.4)	0.074	2.8	43	1	0.47	220	-06	-07	-08	1020
<hr/>											
FN 2080B-1-..	1 (1.2)	0.002	22	490	0.33		1000	-06	-07		200
FN 2080B-3-..	3 (3.5)	0.002	9.8	160	0.47		470	-06	-07		270
FN 2080B-6-..	6 (6.9)	0.002	7.8	110	1		220	-06	-07		470
FN 2080B-10-..	10 (11.5)	0.002	4.5	60	1		220	-06	-07		750
FN 2080B-12-..	12 (13.8)	0.002	3.25	50	1		220	-06	-07		750
FN 2080B-16-..	16 (18.4)	0.002	2.8	43	1		220	-06	-07	-08	1020

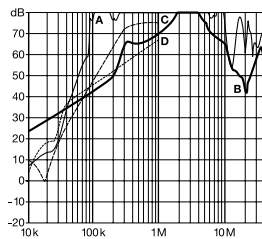
\* To compile a complete part number, please replace the .. with the required I/O connection style (e.g. FN 2080-16-08, FN 2080B-10-06).

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

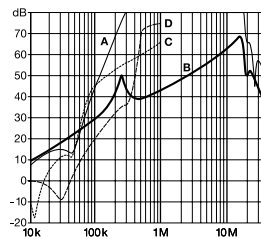
Typical filter attenuation

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

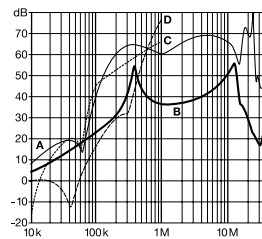
1 to 6A types



10 and 12A types

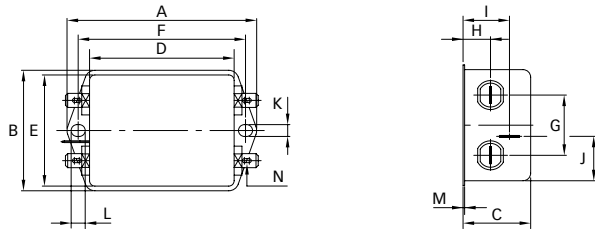


16A types

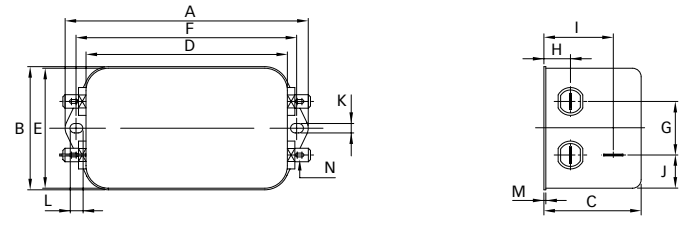


**Mechanical data**

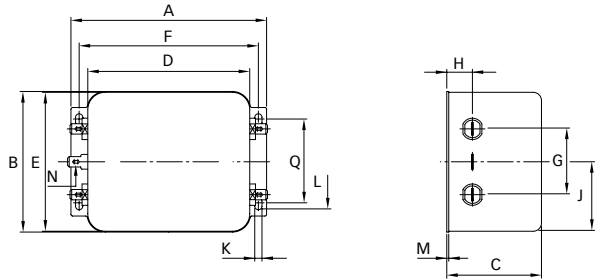
Connection style -06, 1 and 3A types



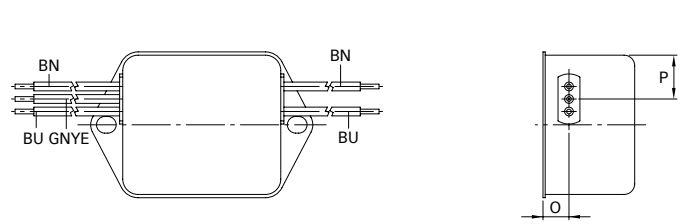
Connection style -06, 6 to 12A types



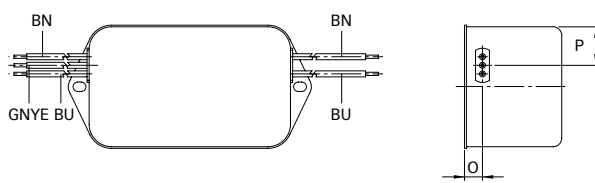
Connection style -06, 16A types



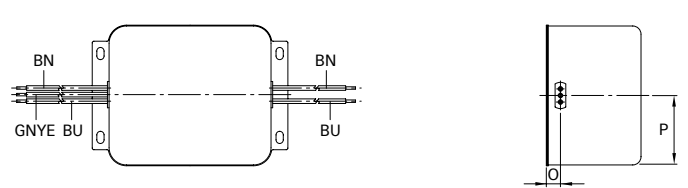
Connection style -07, 1 and 3A types (same dimensions as style -06)



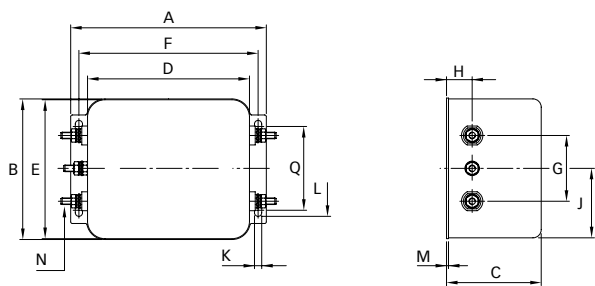
Connection style -07, 6 to 12A types (same dimensions as style -06)



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



Connection style -08, 16A types (same dimensions as style -06)



**Dimensions**

	1A	3A	6A	10A	12A	16A	Tolerances
<b>A</b>	85	85	113.5 ±1	156 ±1	156 ±1	119 ±1	±0.5
<b>B</b>	54	54	57.5 ±1	57.5 ±1	57.5 ±1	85.5 ±1	±0.5
<b>C</b>	30.3	40.3	45.4 ±1	45.4 ±1	45.4 ±1	57.6 ±1	±0.5
<b>D</b>	64.8	64.8	94 ±1	130.5 ±1	130.5 ±1	98.5 ±1	±0.5
<b>E</b>	49.8	49.8	56	56	56	84.5	±0.5
<b>F</b>	75	75	103	143	143	109	±0.3
<b>G</b>	27	27	25	25	25	40	±0.2
<b>H</b>	12.3	12.3	12.4	12.4	12.4	15.6	±0.5
<b>I</b>	20.8	29.8	32.4	32.5	32.5		±0.5
<b>J</b>	19.9	11.4	15.5	15.5	15.5	42.25	±0.5
<b>K</b>	5.3	5.3	4.4	5.3	5.3	4.4	
<b>L</b>	6.3	6.3	6	6	6	7.4	
<b>M</b>	0.7	0.7	0.9	1	1	1.2	
<b>Connection style -06</b>							
<b>N</b>	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	
<b>Connection style -07</b>							
<b>O</b>	8.3	8.3	8.4	8.4	8.4	8.6	±0.5
<b>P</b>	14.9	14.9	18	18	18	42.25	±0.5
<b>AWG type wire</b>	AWG 20	AWG 20	AWG 18	AWG 18	AWG 16	AWG 16	
<b>Wire length</b>	140	140	140	140	140	140	+5
<b>Connection style -08</b>							
<b>N</b>						M4	
<b>Q</b>						51	±0.2

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

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May 2011

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