

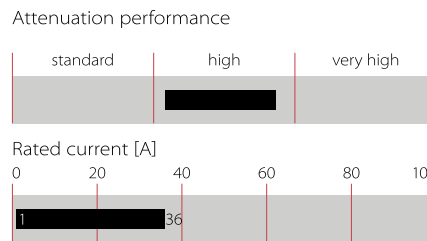
# Multi-stage Performance AC/DC EMI Filter



- Rated currents from 1 to 36 A
- High differential and common-mode attenuation
- High frequency attenuation
- Optional medical versions (B type)
- Optional safety versions (A type)



### Performance indicators



## Technical specifications

<b>Rated voltage*</b>	250 VAC, 50/60 Hz; 250 VDC
<b>Operating frequency</b>	DC to 400 Hz
<b>Rated currents</b>	1 to 36 A @ 40°C max.
<b>High potential test voltage</b>	P → PE 2000 VAC for 2 sec P → PE 2500 VAC for 2 sec (B types) P → N 1100 VDC for 2 sec
<b>Temperature range (operation and storage)</b>	-25°C to +100°C (25/100/21)
<b>Certified to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939 (applies to AC and DC applications)
<b>Flammability corresponding to</b>	UL 94 V-2 or better
<b>Design corresponding to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
<b>MTBF @ 40°C/230 V (Mil-HB-217F)</b>	1,550,000 hours 1,600,000 hours (B types)

\*maximum RMS operating voltage at rated frequency or the maximum DC operating voltage

### Approvals



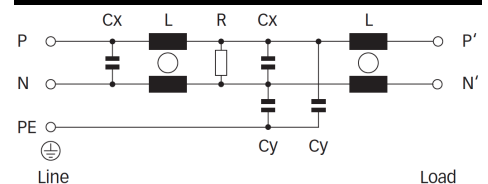
### Features and benefits

- FN 2070 two-stage filters are designed for easy and fast chassis mounting
- FN 2070 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 2070 two-stage filters are designed for high frequency attenuation
- FN 2070 filters are also available as single-stage filters (FN 2030 series)
- FN 2070 filters are also available with differential mode choke (FN 2080 series)
- 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
- Single Phase Motor Drives

### Typical electrical schematic



## Filter selection table

Filter*	Rated current @ 40°C (25°C)	Leakage current** @ 250 VAC/50 Hz (@ 120 VAC/60 Hz)	Inductance L	Capacitance		Resistance R	Input/Output connections			Weight [g]
				Cx [μF]	Cy [nF]					
	[A]	[mA]	[mH]	[μF]	[nF]	[kΩ]				
<b>FN 2070-1-..</b>	1 (1.2)	0.66 (0.38)	22	0.33	4.7	1000	-06	-07		190
<b>FN 2070-3-..</b>	3 (3.5)	0.66 (0.38)	9.8	0.47	4.7	470	-06	-07		250
<b>FN 2070-6-..</b>	6 (6.9)	0.66 (0.38)	7.8	1	4.7	220	-06	-07		450
<b>FN 2070-10-..</b>	10 (11.5)	0.66 (0.38)	4.5	1	4.7	220	-06	-07		670
<b>FN 2070-12-..</b>	12 (13.8)	0.66 (0.38)	3.25	1	4.7	220	-06	-07		670
<b>FN 2070-16-..</b>	16 (18.4)	0.66 (0.38)	2.8	1	4.7	220	-06	-07	-08	1000
<b>FN 2070-25-08</b>	25 (28.8)	0.66 (0.38)	2	2.2	4.7	220			-08	760
<b>FN 2070-36-08</b>	36 (41.4)	0.66 (0.38)	1.23	2.2	4.7	220			-08	790
<b>FN 2070 A-1-..</b>	1 (1.2)	0.07 (0.04)	22	0.33	0.47	1000	-06	-07		190
<b>FN 2070 A-3-..</b>	3 (3.5)	0.07 (0.04)	9.8	0.47	0.47	470	-06	-07		250
<b>FN 2070 A-6-..</b>	6 (6.9)	0.07 (0.04)	7.8	1	0.47	220	-06	-07		450
<b>FN 2070 A-10-..</b>	10 (11.5)	0.07 (0.04)	4.5	1	0.47	220	-06	-07		670
<b>FN 2070 A-12-..</b>	12 (13.8)	0.07 (0.04)	3.25	1	0.47	220	-06	-07		670
<b>FN 2070 A-16-..</b>	16 (18.4)	0.07 (0.04)	2.8	1	0.47	220	-06	-07	-08	1000
<b>FN 2070 A-25-08</b>	25 (28.8)	0.07 (0.04)	2	2.2	0.47	220			-08	760
<b>FN 2070 A-36-08</b>	36 (41.4)	0.07 (0.04)	1.23	2.2	0.47	220			-08	790
<b>FN 2070 B-1-..</b>	1 (1.2)	0.00	22	0.33		1000	-06	-07		190
<b>FN 2070 B-3-..</b>	3 (3.5)	0.00	9.8	0.47		470	-06	-07		250
<b>FN 2070 B-6-..</b>	6 (6.9)	0.00	7.8	1		220	-06	-07		450
<b>FN 2070 B-10-..</b>	10 (11.5)	0.00	4.5	1		220	-06	-07		670
<b>FN 2070 B-12-..</b>	12 (13.8)	0.00	3.25	1		220	-06	-07		670
<b>FN 2070 B-16-..</b>	16 (18.4)	0.00	2.8	1		220	-06	-07	-08	1000
<b>FN 2070 B-25-08</b>	25 (28.8)	0.00	2	2.2		220			-08	760
<b>FN 2070 B-36-08</b>	36 (41.4)	0.00	1.23	2.2		220			-08	790
<b>Enhanced performance</b>										
<b>FN 2070 M-1-06</b>	1 (1.2)	3.69 (2.13)	22	0.33	47	1000	-06			170
<b>FN 2070 M-3-06</b>	3 (3.5)	3.69 (2.13)	9.8	0.47	47	470	-06			250
<b>FN 2070 M-6-06</b>	6 (6.9)	3.69 (2.13)	7.8	1	47	220	-06			450
<b>FN 2070 M-10-06</b>	10 (11.5)	3.69 (2.13)	4.5	1	47	220	-06			670
<b>FN 2070 M-12-06</b>	12 (13.8)	3.69 (2.13)	3.25	1	47	220	-06			670
<b>FN 2070 M-16-..</b>	16 (18.4)	3.69 (2.13)	2.8	1	47	220	-06		-08	1000
<b>FN 2070 M-25-08</b>	25 (28.8)	3.69 (2.13)	2	2.2	47	220			-08	750
<b>FN 2070 L-36-08</b>	36 (41.4)	2.59 (1.49)	1.23	2.2	33	220			-08	790

\* To compile a complete part number, please replace the .. with the required I/O connection style (e.g. FN 2070-25-08, FN 2070B-10-06).

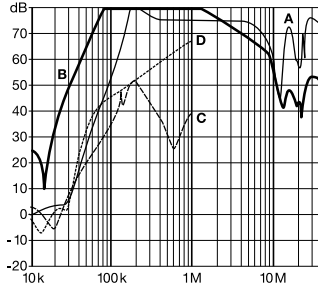
\*\* Maximum leakage under usual AC operating conditions (acc. IEC 60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level. Leakage current for DC application is 0 mA;

### Typical filter attenuation

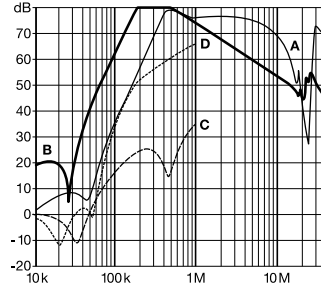
Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym; C=0.1 Ω/100 Ω sym; D=100 Ω/0.1 Ω sym

### Standard Types

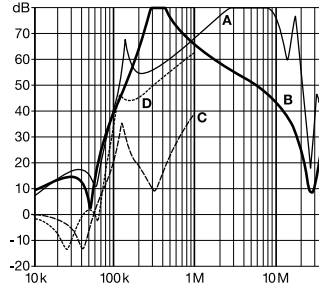
1 A types



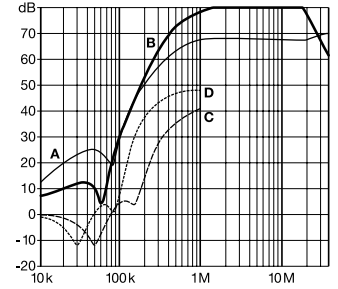
3 A to 12 A types



16 A types

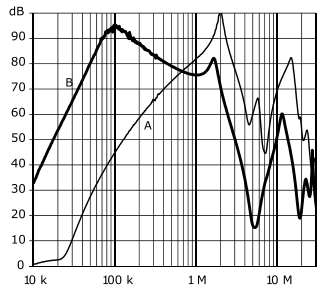


25 and 36 A types

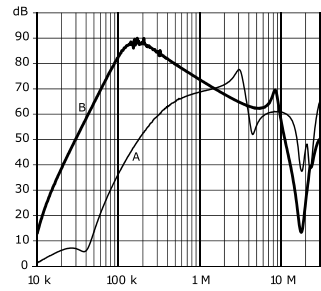


### Enhanced Performance Types

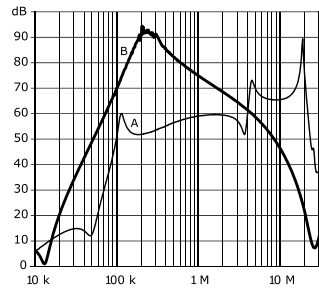
1 A types



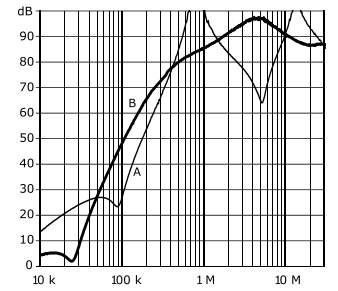
3 A to 12 A Types



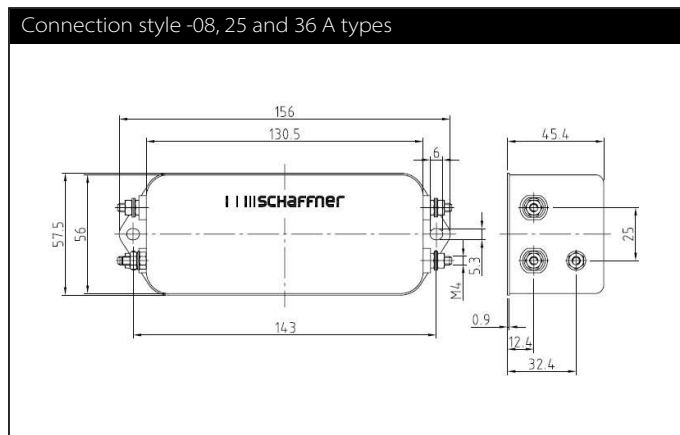
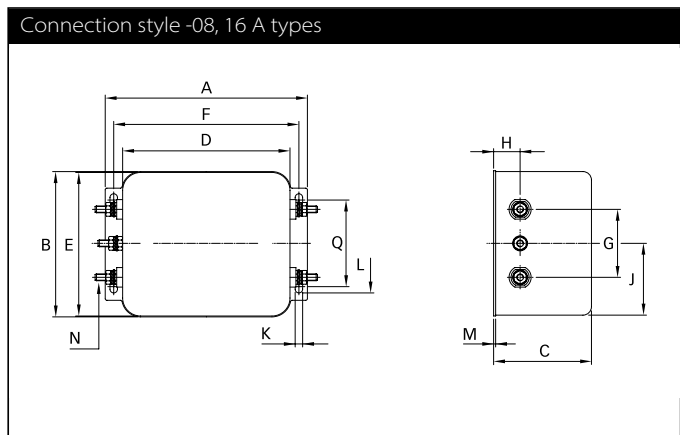
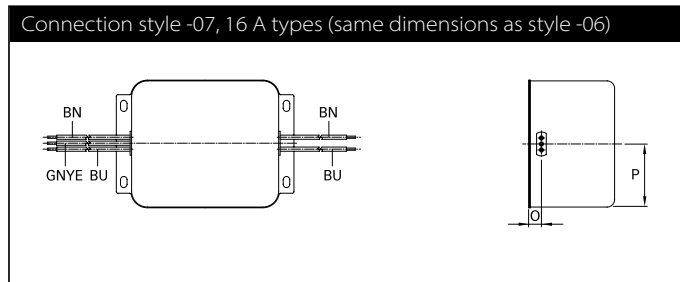
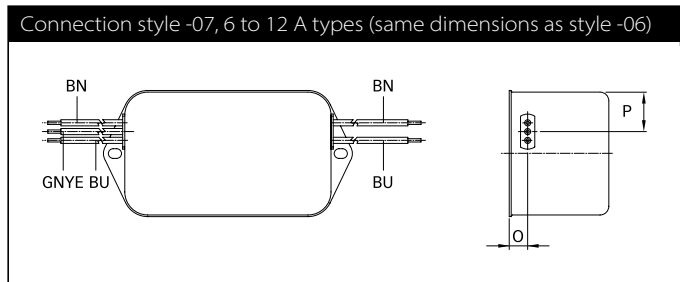
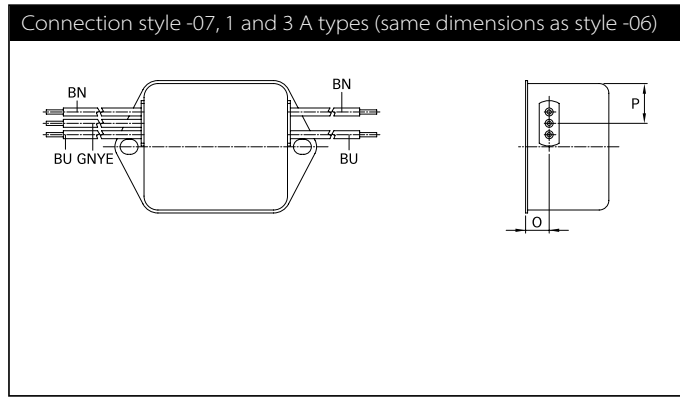
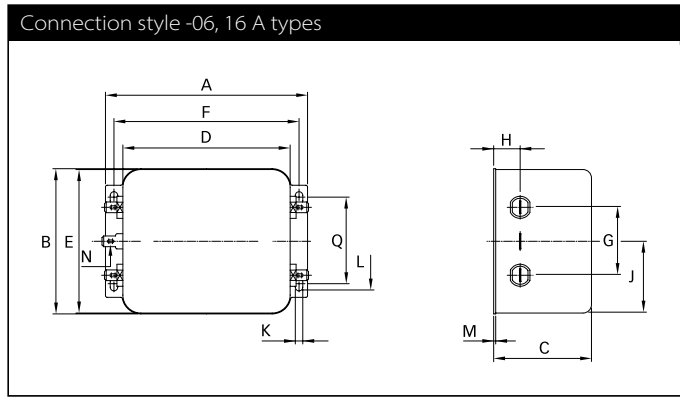
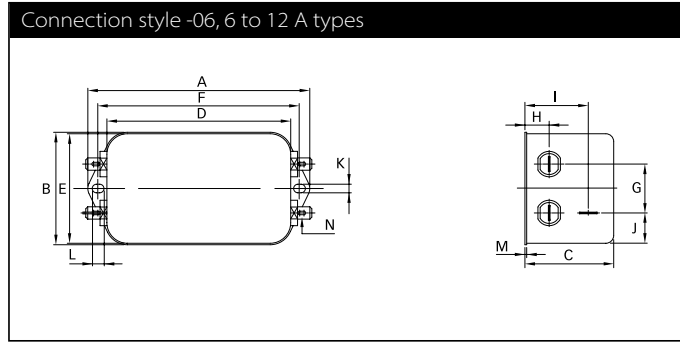
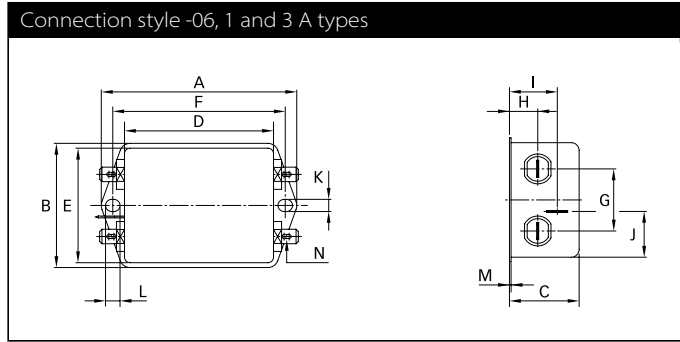
16 A Types



25 A and 36 A Types



### Mechanical data



## Dimensions

	1 A	3 A	6 A	10 A	12 A	16 A	25 A	36 A	Tolerances
<b>A</b>	85 ±0.5	85 ±0.5	113.5	156	156	119	156	156	±1
<b>B</b>	54 ±0.5	54 ±0.5	57.5	57.5	57.5	85.5	57.5	57.5	±1
<b>C</b>	30.3 ±0.5	40.3 ±0.5	45.4	45.4	45.4	57.6	45.4	45.4	±1
<b>D</b>	64.8 ±0.5	64.8 ±0.5	94	130.5	130.5	98.5	130.5	130.5	±1
<b>E</b>	49.8	49.8	56	56	56	84.5	56	56	±0.5
<b>F</b>	75	75	103	143	143	109	143	143	±0.3
<b>G</b>	27	27	25	25	25	40	25	25	±0.2
<b>H</b>	12.3	12.3	12.4	12.4	12.4	15.6	12.4	12.4	±0.5
<b>I</b>	20.8	29.8	32.4	32.5	32.5		32.5	32.5	±0.5
<b>J</b>	19.9	11.4	15.5	15.5	15.5	42.25	15.5	15.5	±0.5
<b>K</b>	5.3	5.3	4.4	5.3	5.3	4.4	5.3	5.3	
<b>L</b>	6.3	6.3	6	6	6	7.4	6	6	
<b>M</b>	0.7	0.7	1	1	1	1.2	1	1	±0.3
<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	M4	M4	
<b>Q</b>						51			±0.2
<b>Recommended torque (Nm)</b>						1.2 - 1.3	1.2 - 1.3	1.2 - 1.3	

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

Please visit [www.schaffner.com](http://www.schaffner.com) to find more details on filter connectors.



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