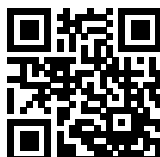


General Purpose AC/DC EMI Filter



Images are for reference only. Please see product specifications

- Rated currents from 1 to 60 A
- General purpose filtering performance
- Optional medical versions (B type)
- Optional safety versions (A type)
- Optional enhanced performance versions
- Optional DC optimized versions



Performance indicators

Attenuation performance



Rated current [A]



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Technical Specifications

Rated voltage*	250 VAC, 50/60 Hz 250 VDC
Operating frequency	DC to 400 Hz
Flammability corresponding to	Laces for -07 version: UL 94 VW-1 Terminal plastic for -06/-08 version: UL 94 V-0 Grommet for -07 version: UL 94 V-0
Overvoltage category	II acc. IEC 60664-1
Pollution degree	2 acc. IEC 60664-1
Altitude	2000m (above derating applies)**
Rated currents	1 to 60 A @ 40°C max.
High potential test voltage	P → N 1100 VDC for 2 sec P → PE 2000 VAC for 2 sec (equiv. cap <88 nF) P → PE 2550 VDC for 2 sec (equiv. cap >88 nF) P → PE 2500 VAC for 2 sec (B types)
Temperature range (operation and storage)	-25 °C to +100 °C (25/100/21)**
Certified to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939 (applies to AC and DC applications)

* maximum RMS operating voltage at rated frequency or the maximum DC operating voltage
 ** for dedicated requests exceeding this specification (e.g. -40 °C or higher altitude) please contact your local Schaffner sales office

Approvals & Compliances



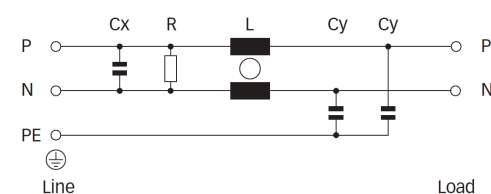
Features and Benefits

- FN 2010 filters are designed for easy and fast chassis mounting
- FN 2010 B versions without capacitors to earth comply to 1MOP for ME (medical equipment) acc. IEC 60601-1
- FN 2010 A versions with low capacitance to earth for safety critical applications with necessity for low leakage currents
- FN 2010 filters are also available as enhanced performance and DC optimized versions. With higher attenuation in very compact housing (M, N1,N types)
- All filters provide a general purpose conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- FN 2010 filters can be used to cover a broad range of usage and they offer a good size/ampereage ratio
- Various terminal options allow you to select the desired connection style




Typical Applications

- Electrical and electronic equipment
- Consumer goods
- Household equipment
- Medical equipment
- Office automation equipment
- Datacom equipment

Typical electrical schematic



Filter Selection Table

Filter*	Buy	Rated current @ 40°C (25°C)	Leakage current** @ 250 VAC/50 Hz (@ 120 VAC/60 Hz)	Power loss @25°C/DC	Inductance***		Capacitance***		Resistance*** R	Input/Output connections			Weight [g]
					L	Cx	Cy						
		[A]	[mA]	[W]	[mH]	[μF]	[nF]	[kΩ]					
FN2010-1-..		1 (1.15)	0.66 (0.38)	0.8	12	0.1	4.7	1000	-06	-07		65	
FN2010-3-..		3 (3.45)	0.66 (0.38)	1.1	2.5	0.1	4.7	1000	-06	-07		65	
FN2010-6-..		6 (6.9)	0.66 (0.38)	1.7	1	0.1	4.7	1000	-06	-07		65	
FN2010-10-..		10 (11.5)	0.66 (0.38)	2.5	0.8	0.1	4.7	1000	-06	-07		85	
FN2010-12-..		12 (13.8)	0.66 (0.38)	3.6	0.7	0.1	4.7	1000	-06	-07		85	
FN2010-16-..		16 (18.4)	0.66 (0.38)	2.5	0.7	0.1	4.7	1000	-06	-07	-08	140	
FN2010-20-..		20 (23)	0.66 (0.38)	3.8	0.6	0.1	4.7	1000	-06	-07	-08	210	
FN2010-30-08		30 (34.5)	0.79 (0.46)	6.3	0.7	0.47	10	1000			-08	470	
FN2010-60-24		60 (69)	0.79 (0.46)	14.7	1	1.5	10	330			-24	1100	
FN2010A-1-..		1 (1.15)	0.07 (0.04)	0.8	12	0.1	0.47	1000	-06	-07		65	
FN2010A-3-..		3 (3.45)	0.07 (0.04)	1.1	2.5	0.1	0.47	1000	-06	-07		65	
FN2010A-6-..		6 (6.9)	0.07 (0.04)	1.7	1	0.1	0.47	1000	-06	-07		65	
FN2010A-10-..		10 (11.5)	0.07 (0.04)	2.5	0.8	0.1	0.47	1000	-06	-07		85	
FN2010A-12-..		12 (13.8)	0.07 (0.04)	3.6	0.7	0.1	0.47	1000	-06	-07		85	
FN2010A-16-..		16 (18.4)	0.07 (0.04)	2.5	0.7	0.1	0.47	1000	-06	-07	-08	140	
FN2010A-20-..		20 (23)	0.07 (0.04)	3.8	0.6	0.1	0.47	1000	-06	-07	-08	210	
FN2010A-30-08		30 (34.5)	0.07 (0.04)	6.3	0.7	0.47	0.47	1000			-08	470	
FN2010A-60-24		60 (69)	0.07 (0.04)	14.7	1	1.5	0.47	330			-24	1100	
FN2010B-1-..		1 (1.15)	0.00	0.8	12	0.1		1000	-06	-07		65	
FN2010B-3-..		3 (3.45)	0.00	1.1	2.5	0.1		1000	-06	-07		65	
FN2010B-6-..		6 (6.9)	0.00	1.7	1	0.1		1000	-06	-07		65	
FN2010B-10-..		10 (11.5)	0.00	2.5	0.8	0.1		1000	-06	-07		85	
FN2010B-12-..		12 (13.8)	0.00	3.6	0.7	0.1		1000	-06	-07		85	
FN2010B-16-..		16 (18.4)	0.00	2.5	0.7	0.1		1000	-06	-07	-08	140	
FN2010B-20-..		20 (23)	0.00	3.8	0.6	0.1		1000	-06	-07	-08	210	
FN2010B-30-08		30 (34.5)	0.00	6.3	0.7	0.47		1000			-08	470	
FN2010B-60-24		60 (69)	0.00	14.7	1	1.5		330			-24	1100	
Enhanced performance													
FN2010N1-1-06		1 (1.15)	5.34 (3.08)	0.8	12	0.1	68	1000	-06			70	
FN2010N1-3-06		3 (3.45)	5.34 (3.08)	1.1	2.5	0.1	68	1000	-06			70	
FN2010N1-6-06		6 (6.9)	5.34 (3.08)	1.7	1	0.1	68	1000	-06			70	
FN2010N1-10-06		10 (11.5)	5.34 (3.08)	2.5	0.8	0.1	68	1000	-06			85	
FN2010N1-12-06		12 (13.8)	3.69 (2.13)	3.6	0.7	0.1	47	1000	-06			85	
FN2010M-16-..		16 (18.4)	3.69 (2.13)	2.5	0.7	0.1	47	1000	-06		-08	140	
FN2010M-20-..		20 (23)	3.69 (2.13)	3.8	0.6	0.1	47	1000	-06		-08	220	
FN2010N-30-08		30 (34.5)	7.85 (4.52)	6.3	0.7	0.47	100	1000			-08	400	
FN2010N-60-24		60 (69)	7.85 (4.52)	14.7	1	1.5	100	330			-24	1120	

*** To compile a complete part number, please replace the -.. with the required I/O connection style (e.g. FN 2010-30-08, FN 2010B-10-06). The different letters code the used Cy values in the filter type (A = 0.47nF; M = 47nF; N1 = 47nF; N = 100nF)

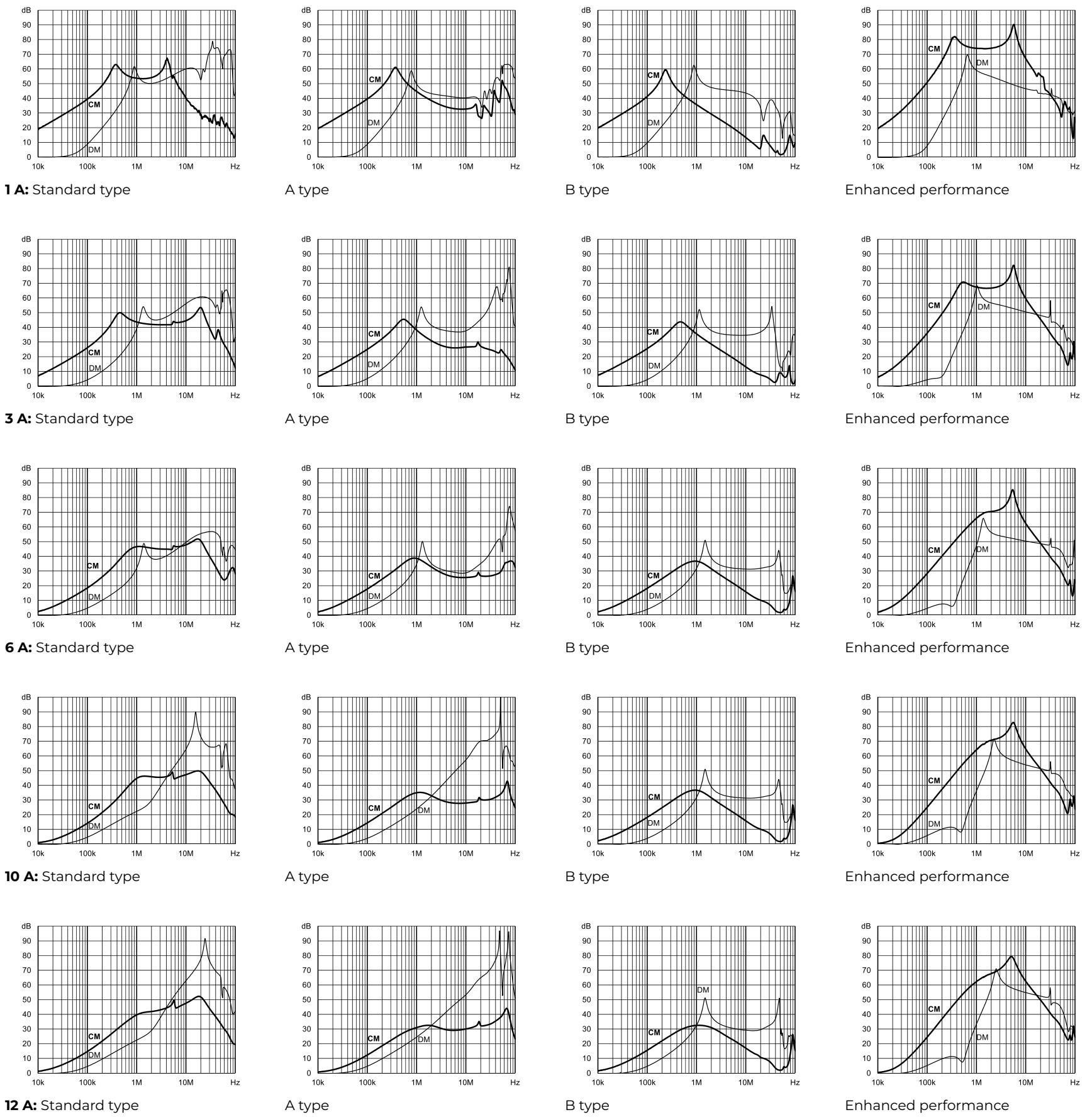
*** Maximum leakage under usual AC operating conditions (acc. IEC 60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

*** Tolerances apply: Inductance: -30/+50%, Capacitance: ±20%, Resistance: ±10%

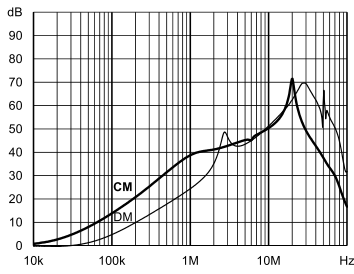
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Typical Filter Attenuation

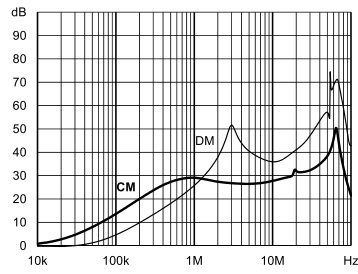
Per CISPR 17: symmetrical 50 Ω/50 Ω -> Differential Mode (DM); asymmetrical 50 Ω/50 Ω -> Common Mode (CM)



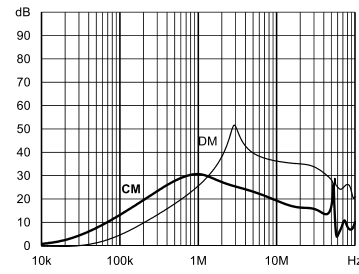
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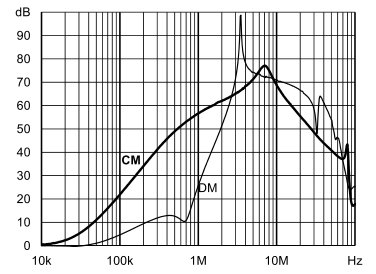
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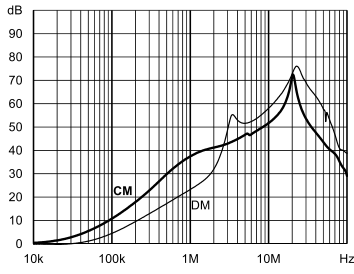
A type



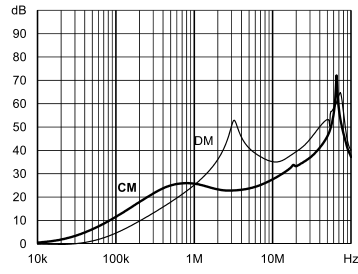
B type



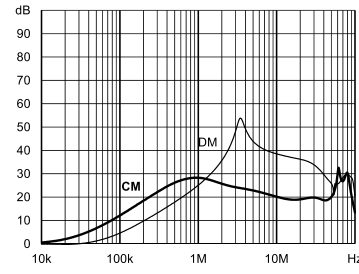
Enhanced performance



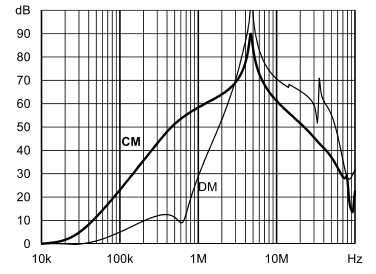
20 A: Standard type



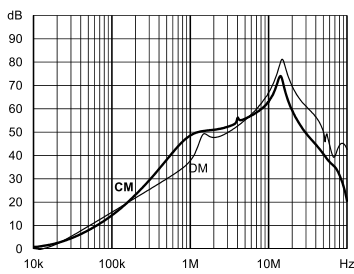
A type



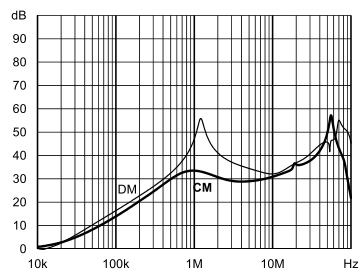
B type



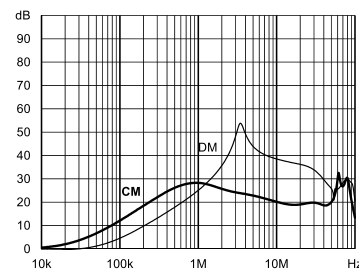
Enhanced performance



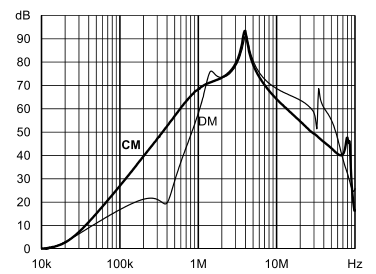
30 A: Standard type



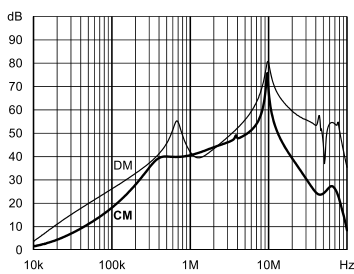
A type



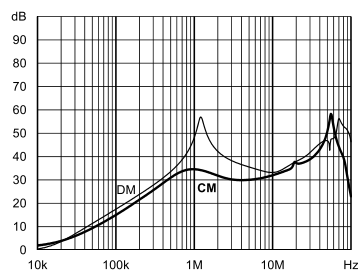
B type



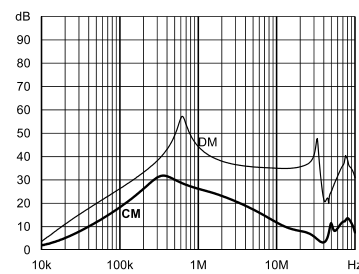
Enhanced performance



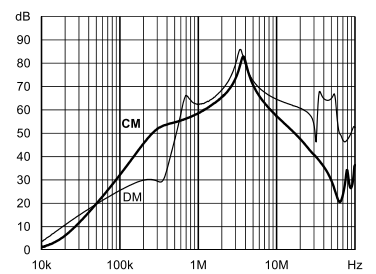
60 A: Standard type



A type



B type

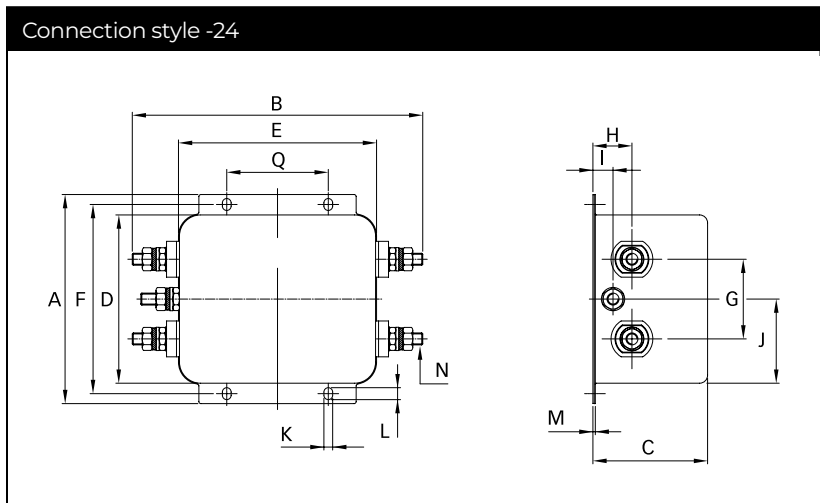
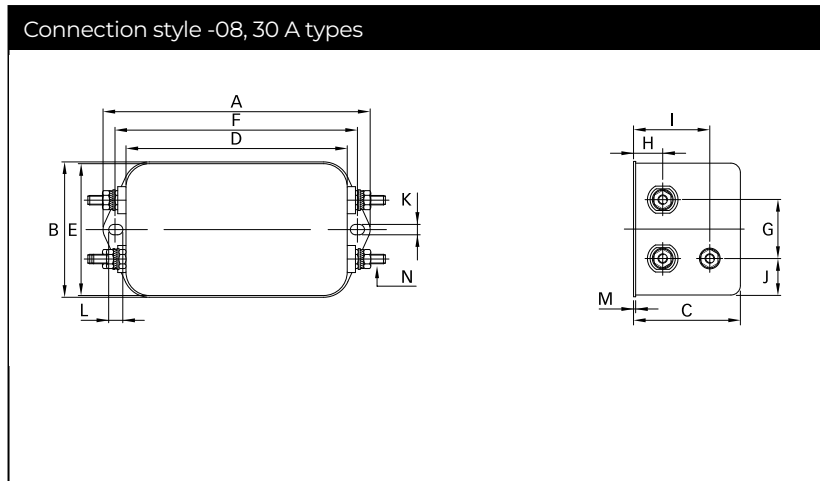
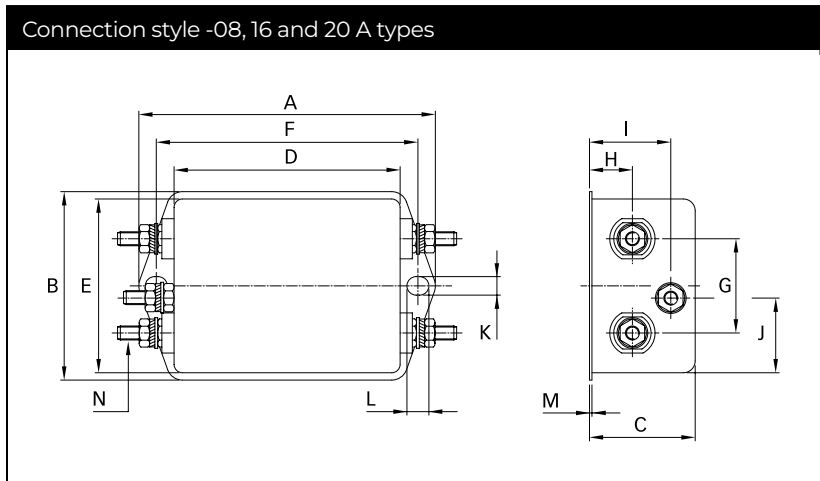
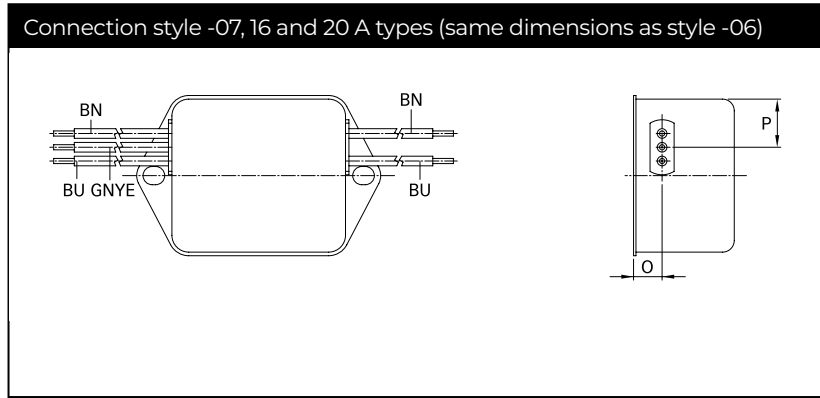
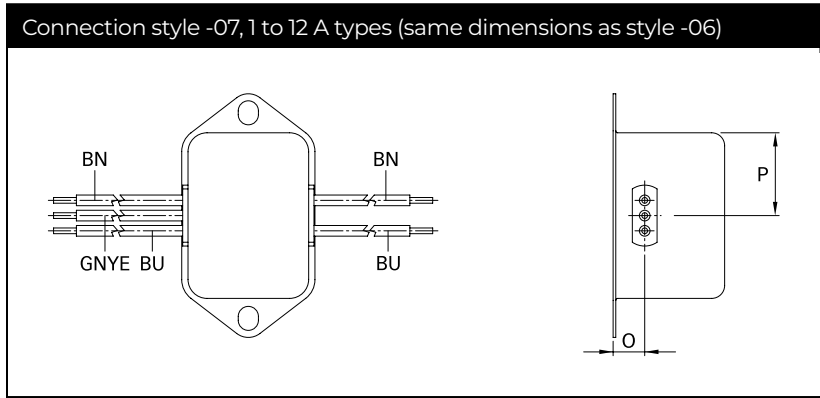
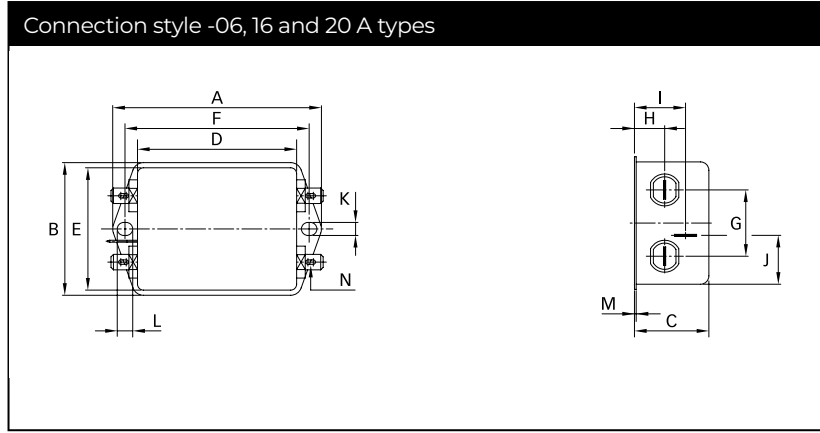
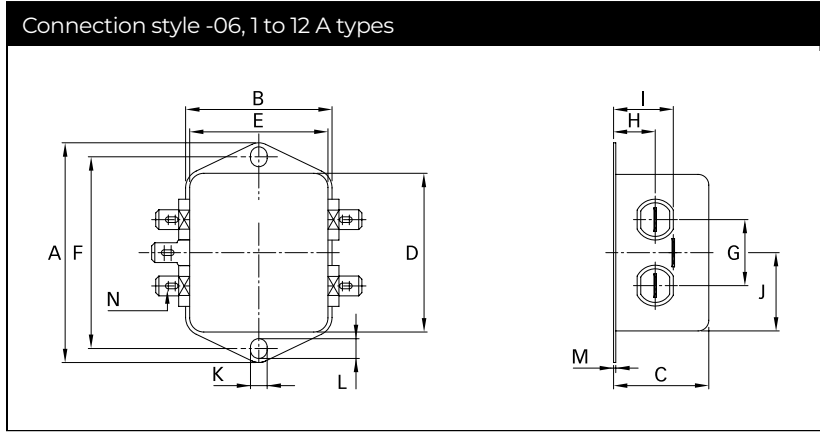


Enhanced performance

Product Selector		
FN 2010-xy-xx-yy		
	06	Faston 6.3 × 0.8 mm (spade/soldering)
	07	Wire leads
	08	Studs (M4 screws)
	24	Studs (M6 screws)
	1 to 60	Rated current
	Blank	Standard version
	Z	With surge protection
	Blank	Standard version
	A	Safety version
	B	Medical version
	N1/N/M	High performance version

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Mechanical Data



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