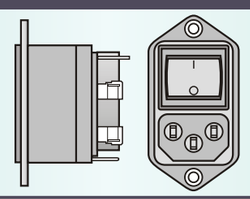
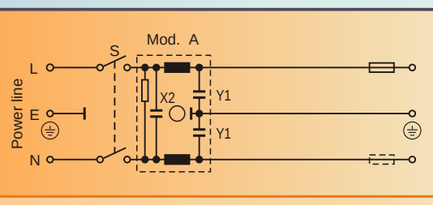
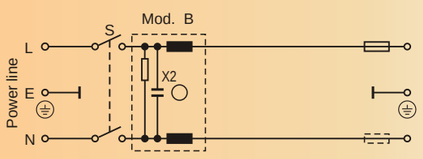
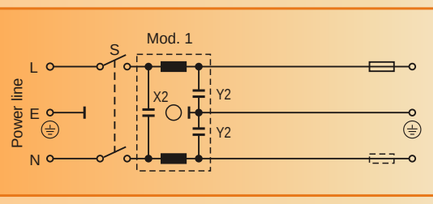
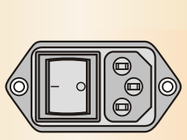
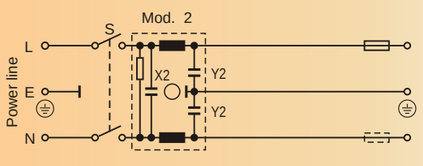
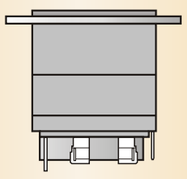
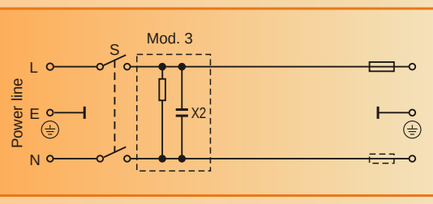
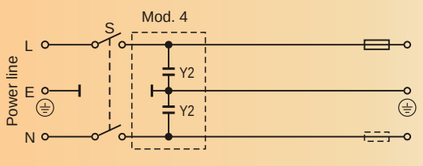
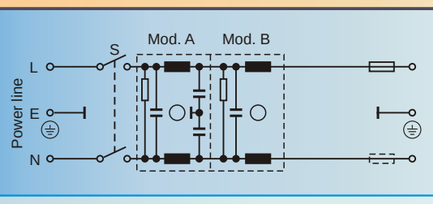
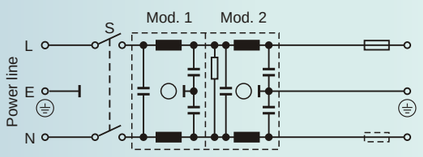
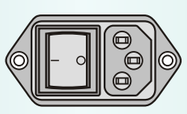
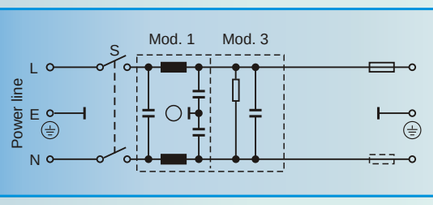
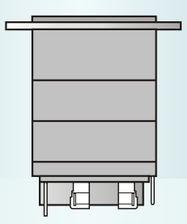
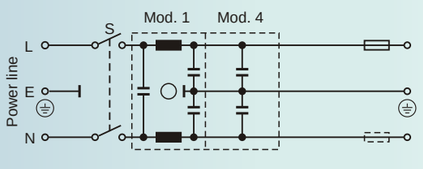
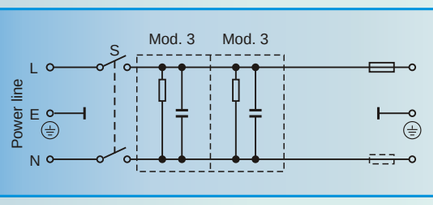
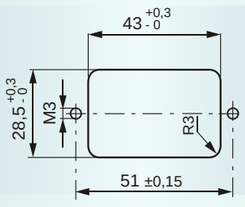
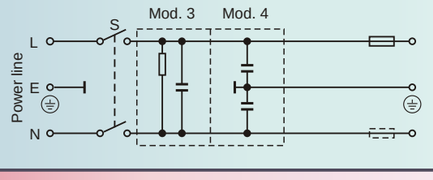
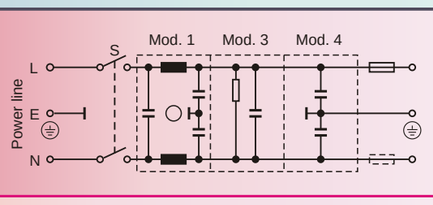
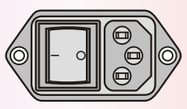
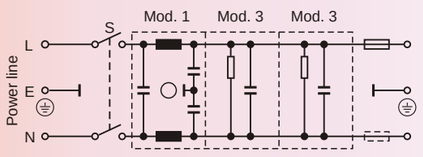
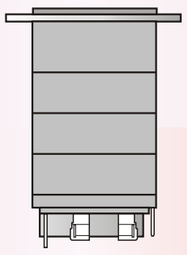
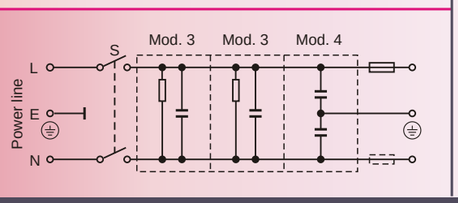
FMCS

Filter-Module-Connect-System

1			KM-2-10-21 KM-2-10-22	**Attachment plug, 10 A** Consisting of: IEC plug and switch + terminal board with fuse holder (1 or 2).
2			FM-3-XX-3A001 FM-3-XX-3A002	**Attachment plug for medical applications with RFI filter module A; 1 ÷ 10 A** $I_{leak.}$ **≤ 60 µA** Consisting of: IEC plug and switch + module A + terminal board with fuse holder (1 or 2). L_N 10, 4, 1.5, 0.8, 0.3 mH XX > I_N 01, 02, 04, 06, 10 Amp. C_{X2} 68nF, C_{Y1} 470 pF, R 1 MΩ
3			FM-3-XX-3B001 FM-3-XX-3B002	**Attachment plug for medical applications with RFI filter module B; 1 ÷ 10 A** $I_{leak.}$ **≤ 5 µA** Consisting of: IEC plug and switch + module B + terminal board with fuse holder (1 or 2). L_N 10, 4, 1.5, 0.8, 0.3 mH XX > I_N 01, 02, 04, 06, 10 Amp. C_{X2} 68nF, C_Y 0.0 pF, R 1 MΩ
4			FM-3-XX-31001 FM-3-XX-31002	**Attachment plug with RFI filter module 1; 1 ÷ 10 A** $I_{leak.}$ **≤ 0.25 mA** Consisting of: IEC plug and switch + module 1 + terminal board with fuse holder (1 or 2). L_N 10, 4, 1.5, 0.8, 0.3 mH XX > I_N 01, 02, 04, 06, 10 Amp. C_{X2} 68nF, C_{Y2} 2.2 nF
5			FM-3-XX-32001 FM-3-XX-32002	**Attachment plug + RFI filter module 2 with discharge resistor; 1 ÷ 10 A** $I_{leak.}$ **≤ 0.25 mA** Consisting of: IEC plug and switch + module 2 + terminal board with fuse holder (1 or 2). L_N 10, 4, 1.5, 0.8, 0.3 mH XX > I_N 01, 02, 04, 06, 10 Amp. C_{X2} 68nF, C_{Y2} 2.2 nF; R 1MΩ
6			FM-3-XX-33001 FM-3-XX-33002	**Attachment plug with X2 capacitor module 3; Cx 330 nF ; R 1MΩ** Consisting of: IEC plug and switch + module 3 + terminal board with fuse holder (1 or 2).
7			FM-3-XX-34001 FM-3-XX-34002	**Attachment plug with Y2 capacitor module 4; 2 x CY 15 nF** Consisting of: IEC plug and switch + module 4 + terminal board with fuse holder (1 or 2).
8			FM-4-XX-4AB01 FM-4-XX-4AB02	**Attachment plug for medical applications with RFI filter modules A+ B; 1 ÷ 10 A** $I_{leak.}$ **≤ 60 µA** Consisting of: IEC plug and switch+ module A + B + terminal board with fuse holder (1 or 2). See above 2 and 3 for the component values
9			FM-4-XX-41201 FM-4-XX-41202	**Attachment plug with 2 RFI filter modules as 2-stage filters.** Consisting of: IEC plug and switch + module 1 + 2 + terminal board with fuse holder (1 or 2). See above 4 and 5 for the component values
10			FM-4-XX-41301 FM-4-XX-41302	**Attachment plug with 2 RFI filter modules as symmetrically reinforced 2-stage filters.** Consisting of: IEC plug and switch + module 1 + 3 + terminal board with fuse holder (1 or 2). See above 4 and 6 for the component values
11			FM-4-XX-41401 FM-4-XX-41402	**Attachment plug with 2 RFI filter modules as asymmetrically reinforced 2-stage filters.** Consisting of: IEC plug and switch + module 1 + 4 + terminal board with fuse holder (1 or 2). See above 4 and 7 for the component values
12			FM-4-XX-43301 FM-4-XX-43302	**Attachment plug with 2 modules as symmetrical capacitive load L - N 2 x 330 nF.** Consisting of: IEC plug and switch + 2 x module 3 + terminal board with fuse holder (1 or 2). See above 6 for the component values
13			FM-4-XX-43401 FM-4-XX-43402	**Attachment plug with 2 modules as a purely capacitive interference suppression network.** Consisting of: IEC plug and switch + module 3 + 4 + terminal board with fuse holder (1 or 2). See above 6 and 7 for the component values
14			FM-5-XX-51341 FM-5-XX-51342	**Attachment plug with 3 modules as symmetrical/asymmetrical reinforced RFI filter.** Consisting of: IEC plug and switch + modules 1 + 3 + 4 + terminal board with fuse holder (1 or 2). See above 4, 6 and 7 for the component values
15			FM-5-XX-51331 FM-5-XX-51332	**Attachment plug with 3 modules as symmetrical heavily reinforced RFI filter.** Consisting of: IEC plug and switch + 2 x module 3 + module 1 + terminal board with fuse holder (1 or 2). See above 4 and 6 for the component values
16			FM-5-XX-53341 FM-5-XX-53342	**Attachment plug with 3 modules as a purely capacitive interference suppression network.** Consisting of: IEC plug and switch + 2 x module 3 + module 4 + terminal board with fuse holder (1 or 2). See above 6 and 7 for the component values

Modular combifilter system

The FMCS concept is a universal modular system. It allows us to use just a few individual modules to put together the RFI filter required for the application and to deliver this to the customer at short notice. The design takes account of intemational directives and standards.
In principle, the system consists of 9 basic assemblies. These are: the basis module with the IEC mains plug and double switch, the 6 different EMC-modules, the terminal board with the fuse holder (1 or 2 pole) and, finally, the aluminium enclosure.
You can find the optimum combination to solve your problems with the basis modules and the various EMC-modules.

Technical data:

Rated voltage	U_R (U_{max}) 253 VAC 50 / 60 Hz
Nominal current	1, 2, 4, 6, 10 A
Inductances L_N	10, 4, 1.5, 0.8, 0.3 mH
Fuses 5 x 20 mm /AT	1, 2, 4, 6, 10 A
Test voltages	L/N → E 2.7 kVDC, 2 sec
	L → N 1.7 kVDC, 2 sec
Climatic category IEC 60068-1	25 / 085 / 21
Degree of protection (front)	IP 40
Value of fuse	≤ value of nom. current!!
Overload current	1.5 x I_N; 1 hour
MTBF @ 40°C at U_R (U_{max})	200'000 h / MIL-HB-217F
IEC Mainsplug	acc. to IEC 60320-1/C14
Attachment plug and earth	Faston 6.3 x 0.8 mm

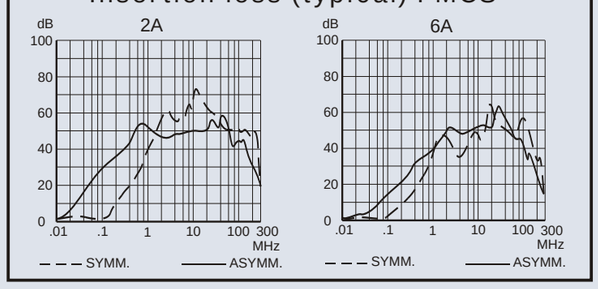
Tested by

EN 133200 (EN 60939)

UL 1283
CSA C22.2 No. 8-M 1986

Patent pending !

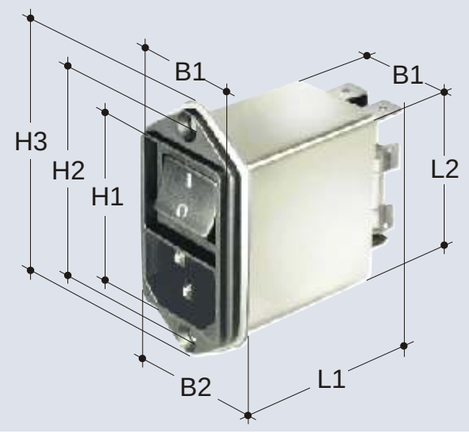
Insertion loss (typical) FMCS



Coding:

FM - X - XX - XXXXX / X

- Filter series FMCS
- Case 1-9 / A-Z
- Nominal current 01,02,04,06,10 A
- Basis module 1-9 / A-Z
- EMC module 1-9 / A-Z
- Terminal board 1-9 / A-Z
- INDEX a-z (internal only)



FMCS filter	B1	B2	H1	H2	H3	L1	L2
BASIS-Module	27,0	33,0	43,0	51,0	62,0	38,5	42,8
1 EMC-Module	27,0	33,0	43,0	51,0	62,0	52,5	42,8
2 EMC-Modules	27,0	33,0	43,0	51,0	62,0	66,5	42,8
3 EMC-Modules	27,0	33,0	43,0	51,0	62,0	80,5	42,8

The advantages of the system

- Modular combination filter system with integrated appliance plug combination (EN 60320-1) and 2-pole integrated mains switch.
- Fuse current values ≤ filter nominal current (no reduction of the fuse current necessary in contrast to products from competition).
- Absolute compliance with max. permitted temperatures even with plastic parts (EN 60320-1).
- Very lightweight construction through latest design with aluminium housing and encapsulated parts.
- Compliance with the latest filter standards (EU-UL).
- The terminal board, with fuse holders (for 5x20 mm slow fuses), the essential heat source (EN 60127-6) is located outside the filter system. This arrangement provides optimum thermal relations. The fuses must be replaced by a qualified electrician (VDE 0100 and EN 60230-1).
- Quick delivery, thanks to storage of the basis modules in the delivery plant.
- Problem solving and help from our specialists in Germany and Switzerland.
- Customers can create their own filter designs.
- The concept provides the greatest possible flexibility in filter design and at the same time a high level of reliability and the lowest costs.
- Designs available for medical technology.