

1-phase filters FN 2410 / FN 2412

Single and two-phase EMC/RFI filters for industrial electronics

SCHAFFNER

energy efficiency and reliability



- Excellent filter performance for applications with high interference levels
- Filters for two-phase supply up to 2x 520VAC (P - P) available
- Fast and comfortable snap-in installation on popular TS 35 DIN-rails up to 45A
- Industrial grade terminal blocks for unsurpassed electrical safety

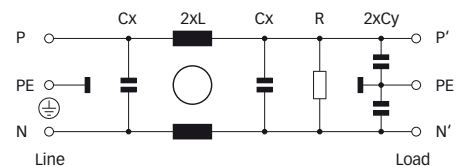
Approvals



Technical specifications

Maximum continuous operating voltage:	1x 250VAC (FN 2410 / FN 2412) 2x 520/300VAC (FN 2410H / FN 2412H)
Operating frequency:	dc to 400Hz (except FN 2410H-60/-80/-100: 250Hz)
Rated currents:	8 to 100A @ 50°C (FN 2410) 8 to 45A @ 50°C (FN 2412)
High potential test voltage:	P → E 2000VAC for 2 sec P → N 1100VDC for 2 sec P → E 2700VDC for 2 sec (H types) P → P 2250VDC for 2 sec (H types)
Protection category:	IP20
Overload capability:	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
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 @ 50°C/250V (Mil-HB-217F):	1,200,000 hours
MTBF @ 50°C/520V (Mil-HB-217F):	250,000 hours (H types)

Typical electrical schematic




Features and benefits

- FN 2410 filters up to 100A are designed for traditional chassis mounting.
- For extra fast installation, FN 2412 filters up to 45A can comfortably be snapped-in on popular TS 35 DIN-rails which are common in most electrical cabinets.
- Both FN 2410 and FN 2412 are also available as „H versions“. These are ideally suitable for an operation on two phases in a three-phase power network, handling voltages up to 520VAC.
- All filters provide an exceptional conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior. Thus, all filters retain the expected filter performance even in very noisy applications and under full load conditions.
- Touch-safe industrial grade terminal blocks provide maximum electrical safety and protect humans from undeliberate contact with live conductors. They help to fulfill the most demanding installation standards.

Typical applications

- Small to medium-sized machines and industrial equipment
- High-end single-phase power supplies
- Single-phase variable speed motor drives, inverters and converters
- DIN-rail filter versions are ideal for panel building and electrical cabinets
- Various noisy applications with higher power single-phase or two-phase supply

Filter selection table

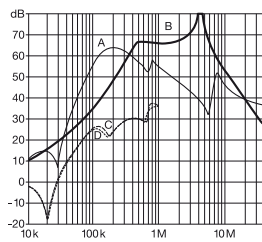
Filter	Rated current @ 50°C (40°C)	Leakage current* @ 230VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections 	Weight [kg]
	[A]	[mA]	[W]		
FN 2410-8-44	8 (8.8)	3.4	2.6	-44	0.4
FN 2410-16-44	16 (17.5)	3.4	3.5	-44	0.5
FN 2410-25-33	25 (27.4)	3.4	5.5	-33	0.6
FN 2410-32-33	32 (35.0)	3.4	5.6	-33	0.7
FN 2410-45-33	45 (49.3)	3.4	7.4	-33	0.7
FN 2410-60-34	60 (65.7)	3.4	5.5	-34	1.8
FN 2410-80-34	80 (87.6)	3.4	9.9	-34	1.8
FN 2410-100-34	100 (109.5)	3.4	15.4	-34	1.8
FN 2410H-8-44	8 (8.8)	3.4	2.6	-44	0.5
FN 2410H-16-44	16 (17.5)	3.4	3.5	-44	0.6
FN 2410H-25-33	25 (27.4)	3.4	5.5	-33	0.7
FN 2410H-32-33	32 (35.0)	3.4	5.6	-33	0.8
FN 2410H-45-33	45 (49.3)	3.4	7.4	-33	0.8
FN 2410H-60-34	60 (65.7)	3.4	5.5	-34	1.9
FN 2410H-80-34	80 (87.6)	3.4	9.9	-34	1.9
FN 2410H-100-34	100 (109.5)	3.4	15.4	-34	1.9
FN 2412-8-44	8 (8.8)	3.4	2.6	-44	0.4
FN 2412-16-44	16 (17.5)	3.4	3.5	-44	0.6
FN 2412-25-33	25 (27.4)	3.4	5.5	-33	0.7
FN 2412-32-33	32 (35.0)	3.4	5.6	-33	0.8
FN 2412-45-33	45 (49.3)	3.4	7.4	-33	0.8
FN 2412H-8-44	8 (8.8)	3.4	2.6	-44	0.5
FN 2412H-16-44	16 (17.5)	3.4	3.5	-44	0.7
FN 2412H-25-33	25 (27.4)	3.4	5.5	-33	0.8
FN 2412H-32-33	32 (35.0)	3.4	5.6	-33	0.9
FN 2412H-45-33	45 (49.3)	3.4	7.4	-33	0.9

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

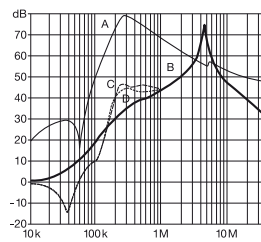
Typical filter attenuation

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

8 to 45A types

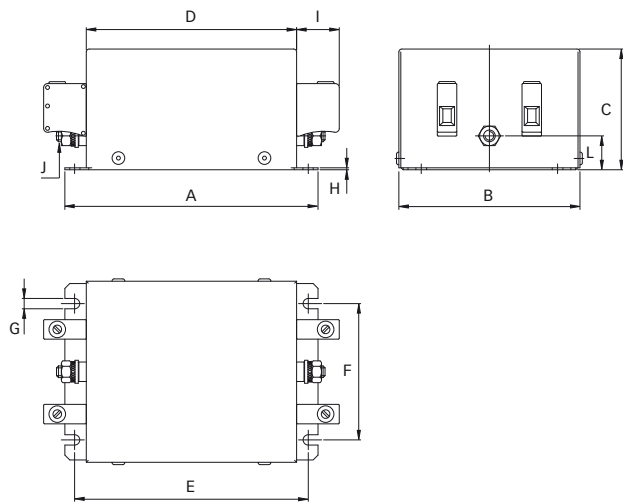


60 to 100A types

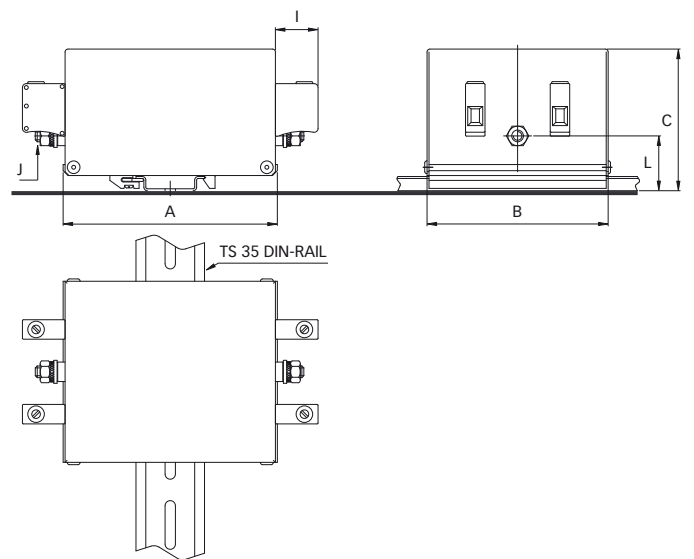


Mechanical data

FN 2410(H)



FN 2412(H)



Dimensions

	FN 2410									FN 2412				
	8A	16A	25A	32A	45A	60A	80A	100A	8A	16A	25A	32A	45A	
A	130	130	130	130	130	165	165	165	110	110	110	110	110	
B	93	93	93	93	93	115	115	115	93	93	93	93	93	
C	62	62	76	76	76	100	100	100	73	73	87	87	87	
D	108	108	108	108	108	140	140	140						
E	120	120	120	120	120	155	155	155						
F	70	70	70	70	70	90	90	90						
G	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3						
H	1.0	1.0	1.0	1.0	1.0	1.2	1.2	1.2						
I	22	22	25	25	25	39	39	39	22	22	25	25	25	
J	M6	M6	M6	M6	M6	M8	M8	M8	M6	M6	M6	M6	M6	
L	17.5	17.5	31.5	31.5	31.5	39.2	39.2	39.2	28.5	28.5	42.5	42.5	42.5	

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

Filter input/output connector cross sections

	-33	-34	-44
Solid wire	16mm ²	35mm ²	10mm ²
Flex wire	10mm ²	25mm ²	6mm ²
AWG type wire	AWG 6	AWG 2	AWG 8
Recommended torque	1.5 - 1.8Nm	4.0 - 4.5Nm	1.5 - 1.8Nm