



Three-phase and neutral line filters

FN 256	43
FN 354	46
FN 355	49
FN 356	51
FN 3256	54
FN 3280	57

Compact general purpose three-phase and neutral line EMC filter

SCHAFFNER

energy efficiency and reliability



- Three-phase and neutral line filter for general purpose four-wire filtering
- Compact space-saving design
- Choice of connection style
- Low operating leakage current

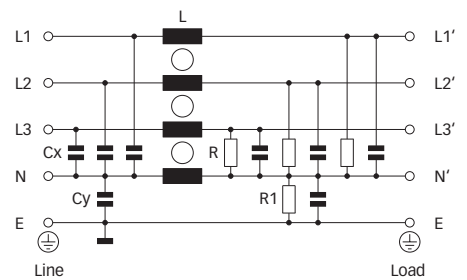
Approvals



Technical specifications

Maximum continuous operating voltage:	3x 480/277VAC
Operating frequency:	dc to 60Hz
Rated currents:	8 to 160A @ 50°C
High potential test voltage:	P → E 2650VDC for 2 sec P → P 2100VDC for 2 sec
Protection category:	IP20
Overload capability:	IP00 (filters with connectors -28) 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/400V (Mil-HB-217F):	600,000 hours

Typical electrical schematic





Features and benefits

- FN 256 filters are designed specifically for applications involving asymmetric loads, ranging from industrial controls to medical electronics systems. These typically involve insufficiently filtered converters and switch-mode power supplies on different phases, causing current imbalance and significant interference problems.
- Employing single-stage filter circuits for each phase and the neutral line, FN 256 filters provide high attenuation of both symmetrical and asymmetrical interference.
- Used as a mains input filter, FN 256 filters also increase conducted immunity and thus contribute to overall system reliability.
- Choice of connection style as well as filter ratings in line with common fuse values support a fast and easy application-specific filter selection and deployment.
- A light weight aluminium housing with a small footprint ensures that the filters can be easily accommodated on control panels and in tight power cabinets.

Typical applications

- General purpose four-wire filtering
- High-power office equipment
- Power supplies
- UPS
- Medical applications
- Electrical cabinets
- Control panels

Filter selection table

Filter*	Rated current @ 50°C (40°C)	Leakage current** @ 400VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections		Weight [kg]
	[A]	[mA]	[W]			
FN 256-8-46	8 (8.8)	3.4	2.7	-46		0.8
FN 256-16-46	16 (17.5)	3.4	6.0	-46		1.1
FN 256-25-47	25 (27)	3.4	11.6	-47		1.4
FN 256-36-47	36 (39)	3.4	14.8	-47		1.5
FN 256-64-52	64 (70)	3.4	18.4	-52		2.2
FN 256-80-..	80 (88)	3.4	18.8	-28***	-34	4.5
FN 256-120-..	120 (131)	5.0	25.1	-28***	-35	6.1
FN 256-160-..	160 (175)	6.8	30.7	-28***	-40	8.0

* To compile a complete part number, please replace the -.. with the required I/O connection style.

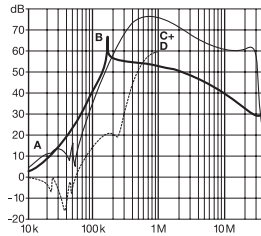
** Maximum leakage under normal operating conditions, based on the assumption that all three phases and the neutral conductor are connected to the supply and the consumer. In this case, the current will mainly return through the neutral line, not as earth leakage.

*** Filters with -28 connections are rated for 40°C environmental temperature only.

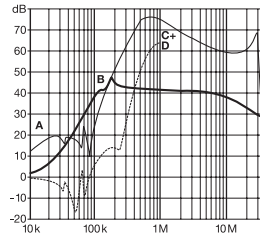
Typical filter attenuation

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

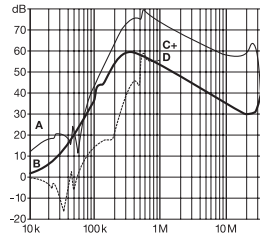
8A types



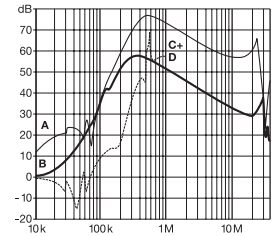
16A types



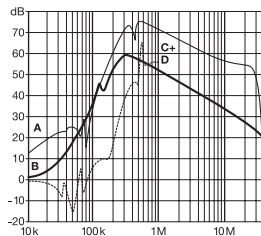
25A types



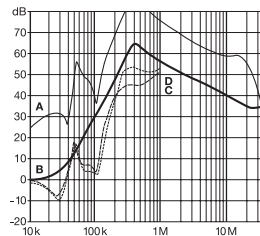
36A types



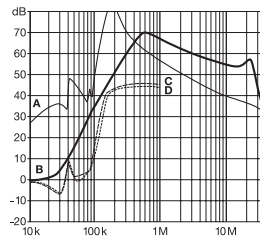
64A types



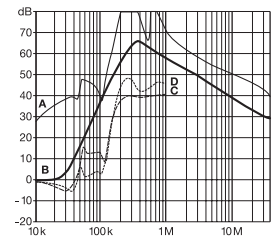
80A types



120A types

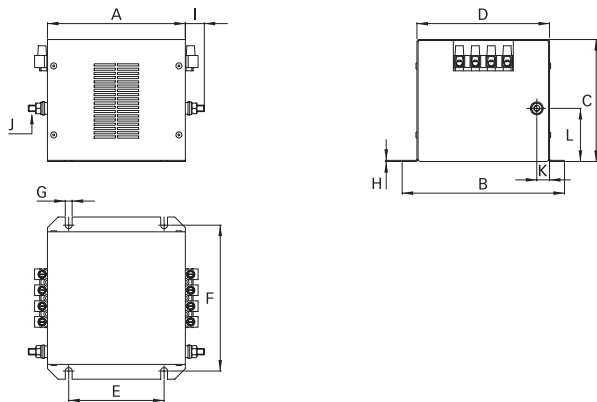


160A types

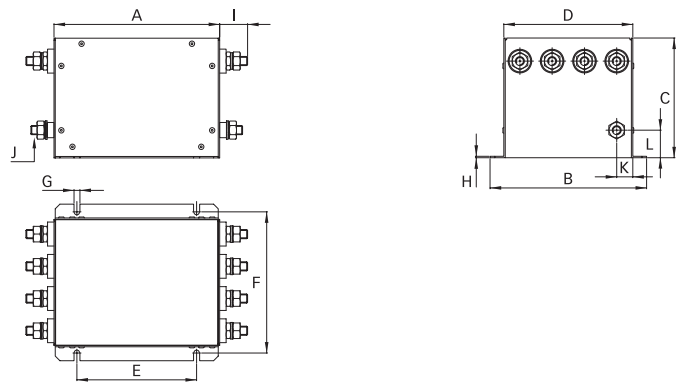


Mechanical data

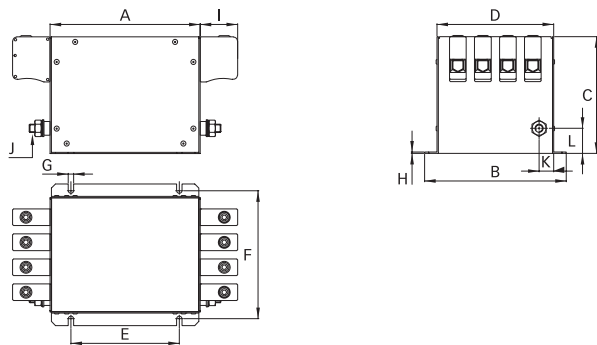
8 to 64A types



80 to 160A types (-28)



80 to 160A types (-34, -35, -40)



Dimensions

	8A	16A	25A	36A	64A	80A (-28)	80A (-34)	120A (-28)	120A (-35)	160A (-28)	160A (-40)
A	120	120	130	130	140	160	160	180	180	200	200
B	143	143	153	153	153	170	170	170	170	170	170
C	80	80	115	115	125	110	110	130	140	130	160
D	115	115	125	125	125	140	140	140	140	140	140
E	80	80	90	90	100	110	110	130	130	150	150
F	127.5	127.5	137.5	137.5	137.5	153.5	153.5	153.5	153.5	153.5	153.5
G	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
H	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5
I	18	18	18	18	18	30	39	30	45	30	49.5
J	M6	M6	M6	M6	M6	M10	M10	M10	M10	M10	M10
K	12	12	13	13	13	17.5	17.5	17.5	17.5	17.5	17.5
L	33	33	50	50	50	30	30	30	30	30	30

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

Filter input/output connector cross sections

	-28 (M10)	-34	-35	-40	-46	-47	-52
Solid wire	n/a	35mm ²	50mm ²	95mm ²	10mm ²	16mm ²	25mm ²
Flex wire	n/a	25mm ²	50mm ²	95mm ²	6mm ²	10mm ²	16mm ²
AWG type wire	n/a	AWG 2	AWG 1/0	AWG 4/0	AWG 10	AWG 8	AWG 4
Recommended torque	17 - 18Nm	4.0 - 4.5Nm	7 - 8Nm	17 - 20Nm	0.7 - 0.8Nm	1.9 - 2.2Nm	1.9 - 2.2Nm

Please visit www.schaffner.com to find more details on filter connectors.

Compact three-phase and neutral line filter for high frequency attenuation

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- Compact four-wire filter for applications with limited space
- High attenuation performance up to 300MHz
- Equally suitable for star and delta power networks

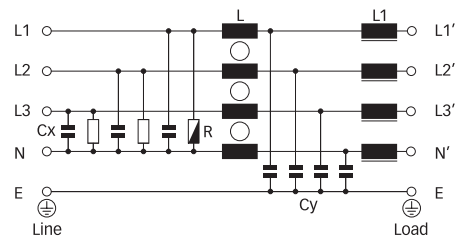
Approvals



Technical specifications

Maximum continuous operating voltage:	3x 440/250VAC
Operating frequency:	dc to 60Hz
Rated currents:	4 to 25A @ 40°C
High potential test voltage:	P → E 2000VAC for 2 sec P → P 1900VDC for 2 sec
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 @ 40°C/400V (Mil-HB-217F):	500,000 hours

Typical electrical schematic




Features and benefits

- The FN 354 family of filters is intended primarily for applications that require extremely effective interference suppression across a broad frequency spectrum.
- Advanced two-stage filter circuits with highly saturating resistant toroidal inductors, in conjunction with feedthrough capacitors on each of the three phases and the neutral line, ensure that these filters provide very high attenuation in the upper frequency band.
- FN 354 are equally suitable for the operation on star and delta power networks.

Typical applications

- Applications requiring high-frequency attenuation
- Power supplies
- Medical equipment
- Office and data processing equipment

Filter selection table

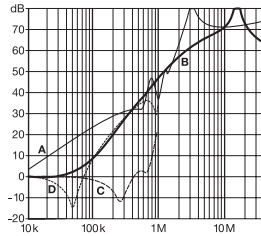
Filter	Rated current @ 40°C (25°C)	Leakage current* @ 400VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections	Weight
	[A]	[mA]	[W]		[kg]
FN 354-4-05	4 (4.5)	0.175	2.0	-05	0.23
FN 354-6-05	6 (6.7)	0.175	3.9	-05	0.38
FN 354-12-05	12 (13.4)	0.175	7.8	-05	1.1
FN 354-15-47	15 (16.8)	0.5	10.8	-47	4.7
FN 354-25-47	25 (28)	0.5	16.9	-47	4.7

* Maximum leakage under normal operating conditions, based on the assumption that all three phases and the neutral conductor are connected to the supply and the consumer. In this case, the current will mainly return through the neutral line, not as earth leakage.

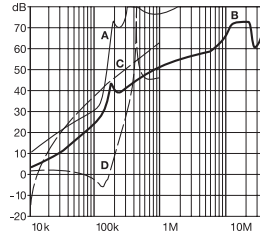
Typical filter attenuation

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

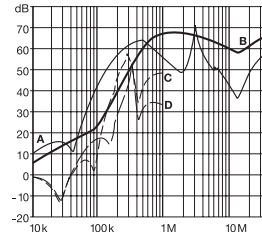
4 and 6A types



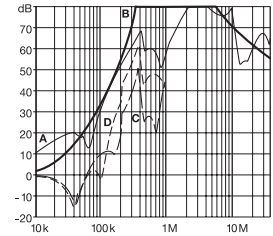
12A types



15A types

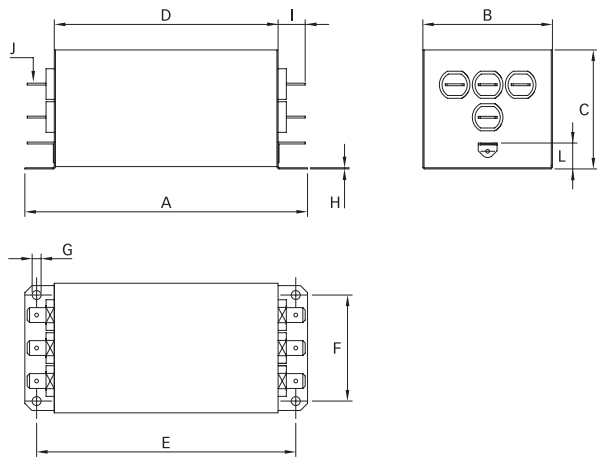


25A types

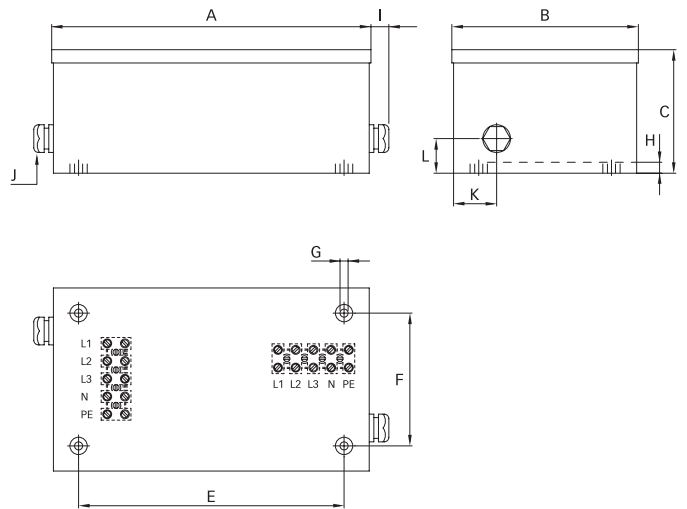


Mechanical data

4 to 12A types



15 and 25A types



Dimensions

	4A	6A	12A	15A	25A
A	103	120	150	273.6	273.6
B	43	55	65	158.6	158.6
C	40.5	50.5	60	107	107
D	80	95	125		
E	95	110	140	230	230
F	35	45	55	115	115
G	Ø3.8	Ø3.8	7.5 x 4.4	M8	M8
H	0.5	0.5	0.75	9.5	9.5
I	11.1	11.1	11.1	~20	~20
J	Faston 6.3 x 0.8	Faston 6.3 x 0.8	Faston 6.3 x 0.8	PG13	PG13
K				35.5	35.5
L	7	11	11	30	30

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

Filter input/output connector cross sections

	-05	-47
Solid wire	n/a	16mm ²
Flex wire	n/a	10mm ²
AWG type wire	n/a	AWG 8
Recommended torque	n/a	1.9 - 2.2Nm

Please visit www.schaffner.com to find more details on filter connectors.

Ultra-compact three-phase and neutral line filter with very low leakage current

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energy efficiency and reliability



- Ultra-compact four-wire filter for applications lacking space
- Exceptional low operating leakage current
- Equally suitable for star and delta power networks

Approvals

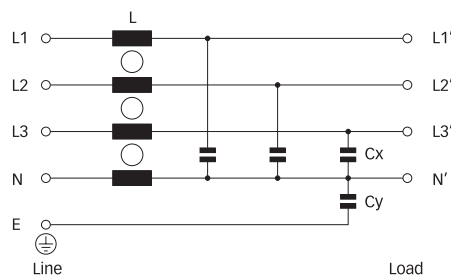


ROHS
2002/95/EC

Technical specifications

Maximum continuous operating voltage:	3x 440/250VAC
Operating frequency:	dc to 400Hz
Rated currents:	3 to 20A @ 40°C
High potential test voltage:	P → E 2000VAC for 2 sec P → P 1900VDC for 2 sec
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 @ 40°C/400V (Mil-HB-217F):	850,000 hours

Typical electrical schematic





Features and benefits

- The FN 355 family of three-phase and neutral line filters provides a cost-effective interference suppression solution for a wide variety of applications.
- Available in four versions, with current ratings from 3 to 20A, the filters employ a single-stage four-wire LC circuit with saturating resistant chokes, and have a very low operational leakage current.
- FN 355 filters are contained within an extremely compact metal housing, making them ideal for use in situations where space is at a premium.

Typical applications

- Office equipment
- Medical equipment
- General purpose four-wire filtering
- Applications with tight space conditions

Filter selection table

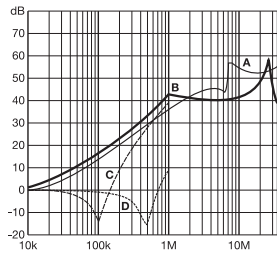
Filter	Rated current @ 40°C (25°C)	Leakage current* @ 400VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections		Weight
	[A]	[mA]	[W]			[kg]
FN 355-3-05	3 (3.4)	0.07	1.4		-05	0.25
FN 355-6-05	6 (6.9)	0.07	1.5		-05	0.25
FN 355-10-05	10 (11.5)	0.07	1.8		-05	0.25
FN 355-20-03	20 (23)	0.29	3.4	-03		0.29

* Maximum leakage under normal operating conditions, based on the assumption that all three phases and the neutral conductor are connected to the supply and the consumer. In this case, the current will mainly return through the neutral line, not as earth leakage.

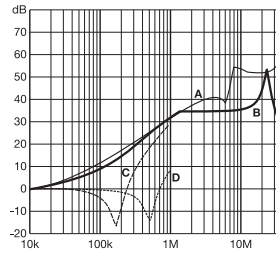
Typical filter attenuation

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

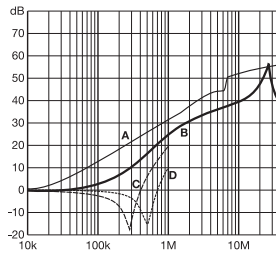
3A types



6A types

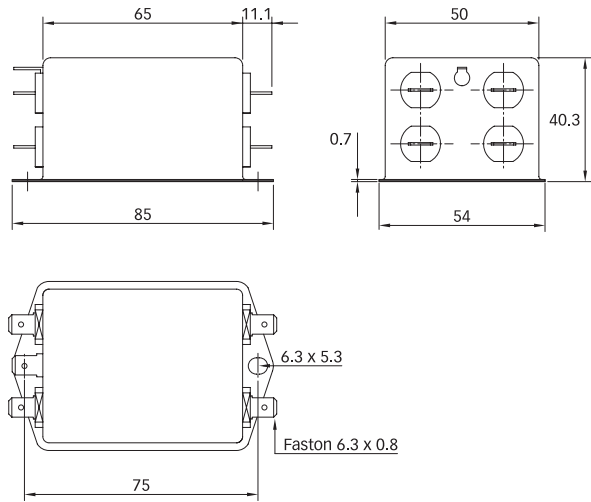


10 and 20A types

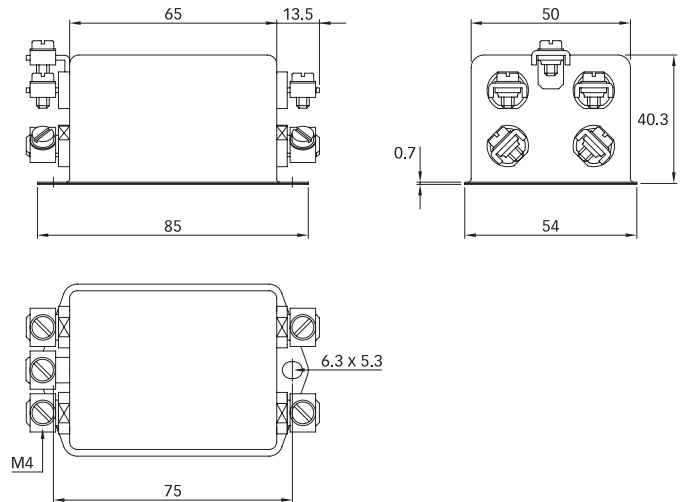


Mechanical data

Filters with faston terminals (3 to 10A types)



Filters with clamp terminals with M4 screw (20A types)



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



3-phase + neutral line filters FN 356

General purpose three-phase and neutral line filter

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- Three-phase and neutral line filter for general four-wire filtering tasks
- Choice of connection style
- Low operating leakage current
- Compliant with IEC 60950
- Suitable to meet EN 55011/14/22

Approvals



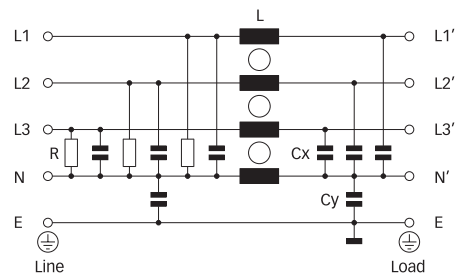
FN 356 up to 100A



Technical specifications

Maximum continuous operating voltage:	3x 440/250VAC
Operating frequency:	dc to 60Hz
Rated currents:	16 to 150A @ 40°C
High potential test voltage:	P → E 2000VAC for 2 sec P → N 1900VDC for 2 sec
Protection category:	IP20 (filters with connectors -29, -33, -34) IP00 (filters with connectors -06, -24, -28)
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 @ 40°C/400V (Mil-HB-217F):	220,000 hours

Typical electrical schematic






Features and benefits

- FN 356 represents the industry standard filter solutions for EMC compliance on three-phases and the neutral conductor, providing high attenuation of both symmetrical and asymmetrical interference.
- Choice of connection style is offered for an application-specific filter selection.
- Solid touch-safe terminal blocks (-29, -35, -34 versions) offer a generous contacting cross section and contribute to overall safety (IP20).
- Used as a mains input filter, FN 356 filters increase the conducted immunity and thus contribute to system reliability.
- Design compliance with IEC 60950 provides additional application flexibility.

Typical applications

- General purpose four-wire filtering
- Mainframe computer systems
- High power office equipment
- UPS
- Installations comprising automation equipment

Filter selection table

Filter*	Rated current @ 40°C (25°C)	Leakage current** @ 400VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections		Weight
	[A]	[mA]	[W]	 -06	 -24  -33	[kg]
FN 356-16-..	16 (18.4)	0.43	7.0	-06	-29	1.2
FN 356-25-..	25 (28.8)	0.43	10.1	-24	-33	1.5
FN 356-36-..	36 (41.5)	0.43	10.9	-24	-33	1.6
FN 356-50-..	50 (57.7)	0.43	15.8	-24	-33	2.3
FN 356-100-..	100 (115.0)	1.33	24.0	-28	-34	5.9
FN 356-150-28	150 (172.5)	8.00	45.9	-28		8.1

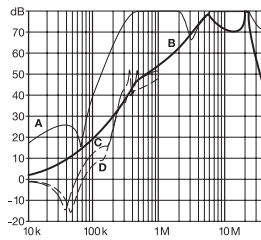
* To compile a complete part number, please replace the .. with the required I/O connection style.

** Maximum leakage under normal operating conditions, based on the assumption that all three phases and the neutral conductor are connected to the supply and the consumer. In this case, the current will mainly return through the neutral line, not as earth leakage.

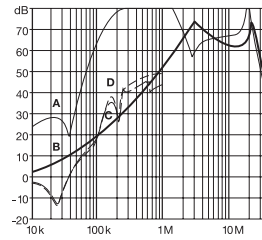
Typical filter attenuation

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

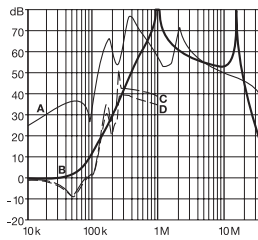
16A types



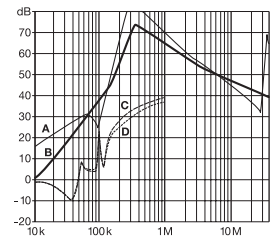
25 to 50A types



100A types

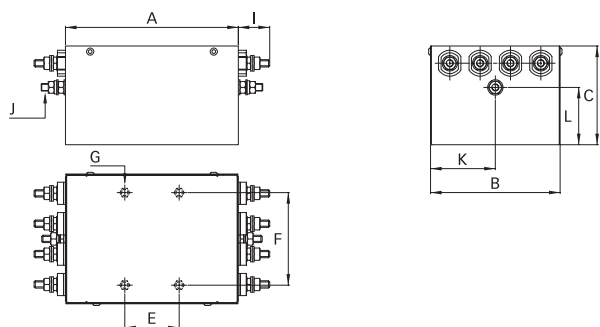


150A types

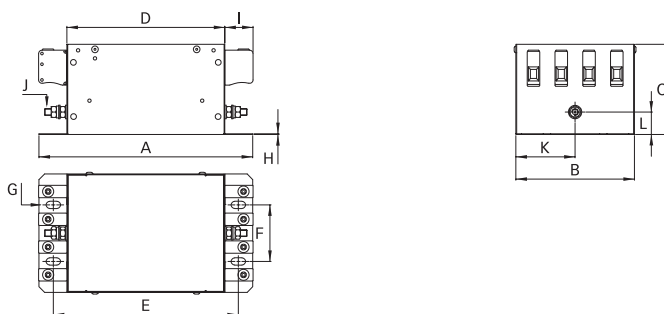


Mechanical data

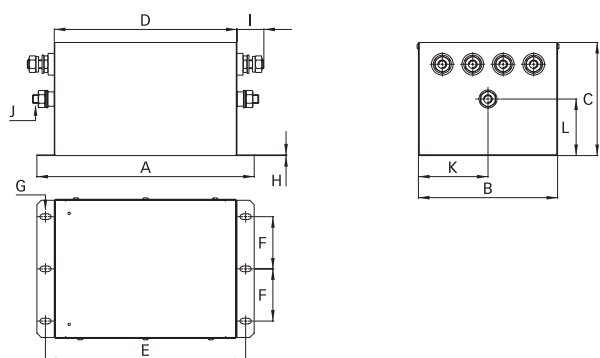
16 to 50A types (-06, -24)



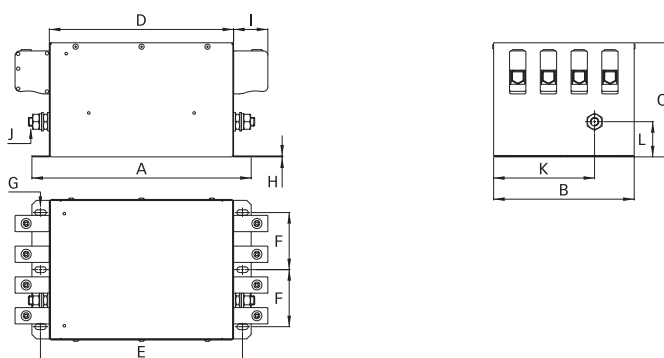
16 to 50A types (-29, -33)



100 and 150A types (-28)



100A type (-34)



Note: in favour of a better readability, connectors and earth studs are not shown in the horizontal projection.

Dimensions

	16A (-06)	16A (-29)	25A (-24)	25A (-33)	36A (-24)	36A (-33)	50A (-24)	50A (-33)	100A (-28)	100A (-34)	150A
A	149	189.5	140	189.5	140	189.5	143.25	192	250	249.6	340
B*	104	105	105	105	105	105	122	122	160	160	160
C	50	80	80	80	80	80	102	102	130	130	130
D		140		140		140		142.5	210	210	300
E	44 ±0.3	165.5	44 ±0.3	165.5	44 ±0.3	165.5	44 ±0.3	168	232	230	320
F	75 ±0.3	80	75 ±0.3	50	75 ±0.3	50	75 ±0.3	98	60	65	60
G	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	13 x 6.5	13 x 6.5	13 x 6.5
H		0.7		0.7		0.7		0.7	1	1	1
I	11	10.9	25.4	25	25.4	25	25.4	25	31	39	31
J	6.3 x 0.8	M6	M6	M6	M6	M6	M6	M6	M10	M10	M10
K	52	82	52.5	52.5	52.5	52.5	61	61	80	116	80
L	22.5	25	46.5	20	46.5	20	68.5	35	65	40	65

* Rivets exceed this dimension by max. 1.3mm on each side.

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

Filter input/output connector cross sections

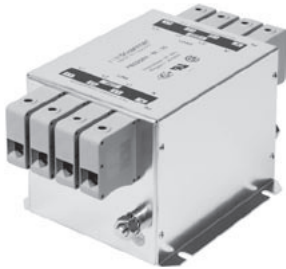
	-06 (6.3 x 0.8mm)	-24 (M6)	-28 (M10)	-29	-33	-34
Solid wire	n/a	n/a	n/a	6mm ²	16mm ²	35mm ²
Flex wire	n/a	n/a	n/a	4mm ²	10mm ²	25mm ²
AWG type wire	n/a	n/a	n/a	AWG 10	AWG 6	AWG 2
Recommended torque	n/a	3.5 - 4.0Nm	17 - 18Nm	0.6 - 0.8Nm	1.5 - 1.8Nm	4.0 - 4.5Nm

Please visit www.schaffner.com to find more details on filter connectors.

Compact three-phase and neutral line filter for industrial machinery/equipment

SCHAFFNER

energy efficiency and reliability



- Compact, space-saving design, optimized for industrial machinery
- Combines high attenuation performance with low leakage current
- Performance according to the machine tool standard EN 50370-1
- Increases also the immunity if operated directly on the mains input

Approvals



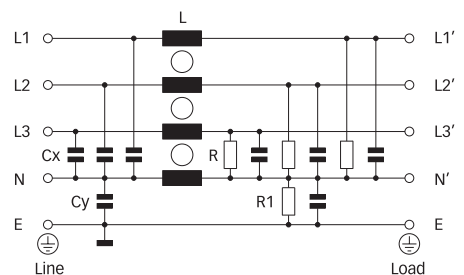
Technical specifications

Maximum continuous operating voltage:	3x 520/300VAC (480VAC +10% possible)
Operating frequency:	dc to 60Hz
Rated currents:	8 to 160A @ 50°C
High potential test voltage:	P → E 3000VDC for 2 sec P → P 2250VDC for 2 sec
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/400V (Mil-HB-217F):	>410,000 hours

Features and benefits

- An extremely compact and light weight filter design with a „cubic“ shape, requiring minimum mounting space and thus taking the constructional conditions on the mains input of machinery into account.
- Simple and time-saving installation with good accessibility for automatic and hand tools.
- Solid, touch-safe terminal blocks offering sufficient contacting cross section according to the EN 60204-1 installation standard, which is very common in industrial applications.
- As a mains input filter for three phases and neutral line, FN 3256 ensures the compliance with the new product family standard for machine tools in mainly industrial environments EN 50370-1. Further, its use will also increase the conducted immunity of the entire installation significantly.
- FN 3256 provides the attenuation performance to meet the requirements of various machine tools with up to 8 driving axes with ~10m of motor cable each.
- For easy selection and application, the filter current ratings are aligned with common fuse values.


Typical electrical schematic



Typical applications

Mainly industrial equipment, machinery, machine tools and diverse process automation systems with three-phase and neutral electricity supply. Further, these filters are suitable for power supplies, high-power office equipment and further applications, where efficient interference suppression on three phases and the neutral line is required and where space is critical. Because of the very low leakage current, FN 3256 can even be used for some medical devices.

Filter selection table

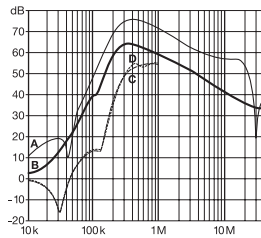
Filter	Rated current @ 50°C (40°C)	Leakage current* @ 480VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections 	Weight
	[A]	[mA]	[W]		[kg]
FN 3256H-8-29	8 (8.8)	<1	2.7	-29	0.6
FN 3256H-16-29	16 (17.5)	<1	5.0	-29	0.7
FN 3256H-25-33	25 (27)	<1	9.8	-33	1.1
FN 3256H-36-33	36 (39)	<1	11.3	-33	1.2
FN 3256H-64-34	64 (70)	<1	17.2	-34	2.3
FN 3256H-80-35	80 (88)	<1	14.5	-35	3.5
FN 3256H-120-35	120 (131)	<1	25.0	-35	4.7
FN 3256H-160-40	160 (175)	<1	26.9	-40	5.7

* Maximum leakage under normal operating conditions, based on the assumption that all three phases and the neutral conductor are connected to the supply and the consumer. In this case, the current will mainly return through the neutral line, not as earth leakage.

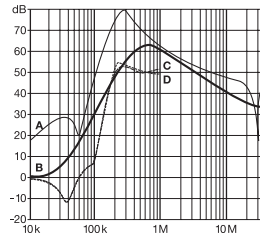
Typical filter attenuation

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

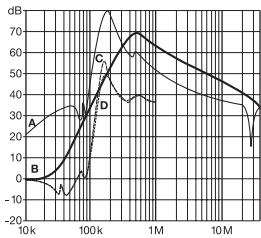
8 to 36A types



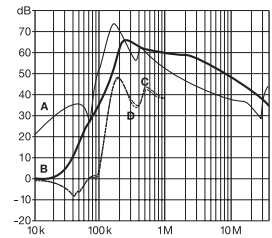
64 and 80A types



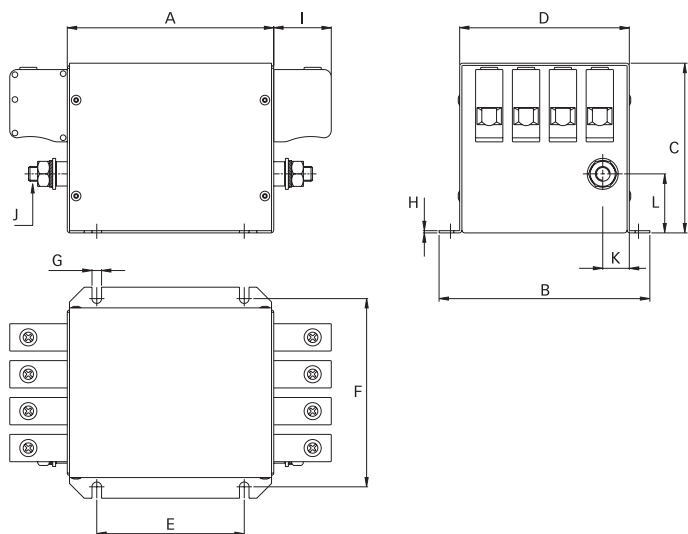
120A types



160A types



Mechanical data



Dimensions	8A	16A	25A	36A	64A	80A	120A	160A
A	110	110	130	130	140	170	210	200
B	110	110	118	118	143	163	170	190
C	70	70	85	85	115	125	125	130
D	82	82	90	90	115	135	140	160
E	70	70	90	90	100	120	160	150
F	94.5	94.5	102.5	102.5	127.5	147.5	153.5	173.5
G	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
H	1	1	1	1	1.5	1.5	1.5	1.5
I	11.4	11.4	25	25	39	45	45	49.5
J	M6	M6	M6	M6	M10	M10	M10	M10
K	12	12	12	12	18	18	17.5	16.5
L	33	33	40	40	40	35	44	55

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

Filter input/output connector cross sections

	-29	-33	-34	-35	-40
Solid wire	6mm ²	16mm ²	35mm ²	50mm ²	95mm ²
Flex wire	4mm ²	10mm ²	25mm ²	50mm ²	95mm ²
AWG type wire	AWG 10	AWG 6	AWG 2	AWG 1/0	AWG 4/0
Recommended torque	0.6 - 0.8Nm	1.5 - 1.8Nm	4.0 - 4.5Nm	7 - 8Nm	17 - 20Nm

Please visit www.schaffner.com to find more details on filter connectors.

High-end three-phase and neutral line filter for industrial machinery/equipment

SCHAFFNER
energy efficiency and reliability



- Compact, space-saving design, optimized for industrial machinery
- Combines exceptional attenuation with low leakage current
- Suitable for machines in mixed/domestic environments (Class A/B)
- Increases also the immunity if operated directly on the mains input

Approvals



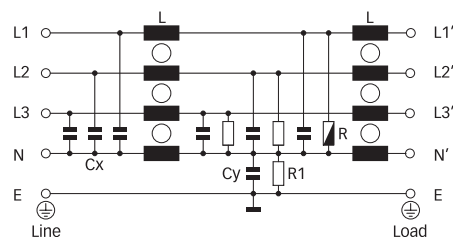
Technical specifications

Maximum continuous operating voltage:	3x 520/300VAC (480VAC + 10% possible)
Operating frequency:	dc to 60Hz
Rated currents:	8 to 200A @ 50°C
High potential test voltage:	P → E 2750VDC for 2 sec P → P 2250VDC for 2 sec
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/400V (Mil-HB-217F):	>360,000 hours

Features and benefits

- A compact and light weight filter design with a „cubic“ shape, requiring minimum mounting space and thus taking the constructional conditions on the mains input of machinery into account.
- Simple and time-saving installation with good accessibility for automatic and hand tools.
- Solid, touch-safe terminal blocks offering sufficient contacting cross section according to the EN 60204-1 installation standard, which is very common in industrial applications.
- As a mains input filter for three phases and neutral line, FN 3280 provides enough performance to ensure EMC compliance of machinery in mixed (Class A) or even domestic (Class B) environments. Further, its use will also increase the immunity of the entire installation significantly.
- FN 3280 provides the attenuation performance needed to meet the requirements of various machine tools with up to 12 driving axes and ~10 to 20m of motor cable each.
- For easy selection and application, the filter current ratings are aligned with common fuse values.


Typical electrical schematic



Typical applications

Mainly industrial equipment, machinery, machine tools and diverse process automation systems with three-phase and neutral electricity supply. Due to the outstanding attenuation performance, FN 3280 is also the first choice for noisy power supplies, high-power office equipment and further three-phase and neutral devices. Because of the relatively low leakage current, FN 3280 may even be used for some medical devices.

Filter selection table

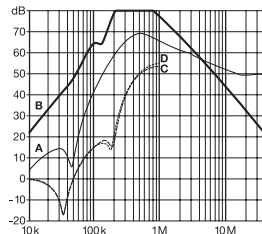
Filter	Rated current @ 50°C (40°C)	Leakage current* @ 480VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections 	Weight [kg]
	[A]	[mA]	[W]		
FN 3280H-8-29	8 (8.8)	<1	2.7	-29	0.8
FN 3280H-16-29	16 (17.5)	<1	6.0	-29	0.8
FN 3280H-25-33	25 (27)	<1	11.6	-33	1.3
FN 3280H-36-33	36 (39)	<1	14.8	-33	1.6
FN 3280H-64-34	64 (70)	<1	18.4	-34	2.7
FN 3280H-80-35	80 (88)	<1	18.9	-35	4.1
FN 3280H-120-35	120 (131)	<1	28.5	-35	5.9
FN 3280H-160-40	160 (175)	<1	30.7	-40	7.9
FN 3280H-200-40	200 (219)	<1	46.8	-40	8.5

* Maximum leakage under normal operating conditions, based on the assumption that all three phases and the neutral conductor are connected to the supply and the consumer. In this case, the current will mainly return through the neutral line, not as earth leakage.

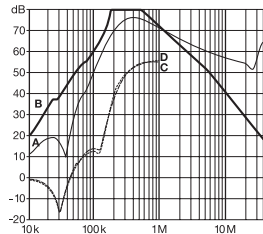
Typical filter attenuation

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

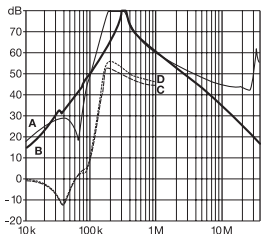
8 and 16A types



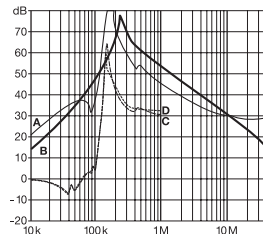
25 and 36A types



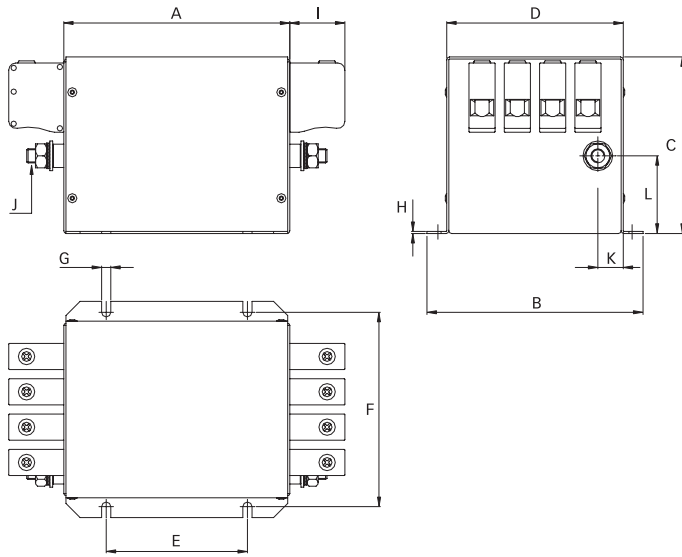
64 to 120A types



160 and 200A types



Mechanical data



Dimensions

	8A	16A	25A	36A	64A	80A	120A	160A	200A
A	120	120	130	130	160	230	250	280	280
B	143	143	153	153	153	163	170	170	170
C	80	80	115	115	125	125	140	170	170
D	115	115	125	125	125	135	140	140	140
E	80	80	90	90	100	120	200	230	230
F	127.5	127.5	137.5	137.5	137.5	147.5	153.5	153.5	153.5
G	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
H	1	1	1	1	1.5	1.5	1.5	1.5	1.5
I	11.4	11.4	25	25	39	45	45	49.5	49.5
J	M6	M6	M6	M6	M10	M10	M10	M10	M10
K	12	12	12	12	18	18	17.5	17.5	17.5
L	33	33	50	50	55	45	55	55	55

All dimensions in mm; 1 inch = 25.4mm

Tolerances according: ISO 2768 / EN 22768

Filter input/output connector cross sections

	-29	-33	-34	-35	-40
Solid wire	6mm ²	16mm ²	35mm ²	50mm ²	95mm ²
Flex wire	4mm ²	10mm ²	25mm ²	50mm ²	95mm ²
AWG type wire	AWG 10	AWG 6	AWG 2	AWG 1/0	AWG 4/0
Recommended torque	0.6 - 0.8Nm	1.5 - 1.8Nm	4.0 - 4.5Nm	7 - 8Nm	17 - 20Nm

Please visit www.schaffner.com to find more details on filter connectors.

