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shaping electrical power

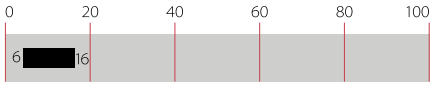
Single-phase EMC Filter for Control Equipment

- Filter for the control line of complex equipment and machinery
- To ensure interference-free operation of control equipment (PLC, Motion-, Robot Control etc.)
- To improve operational reliability and system stability
- Compact EMC filter design with minimum space requirement

Performance indicators

Attenuation performance

Rated current [A]



Technical specifications

Maximum continuous operating voltage	250 VAC
Operating frequency	DC to 400 Hz
Rated currents	6 to 16 A @ 50°C
High potential test voltage	P/N –> E 2250VDC for 2 sec P –> N 1100VDC for 2 sec
Protection category	IP 20
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 94 V-2 or better
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF @ 50°C/250 V (Mil-HB-217F)	1,300,000 hours

Approvals & Compliances

RoHS

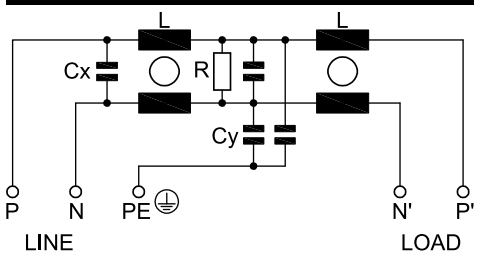
Features and benefits

- An additional filter for the supply cables of controls of rather large and complex systems, to ensure a reliable operation of the control unit.
- To achieve significant system stability improvement by reducing the risk of internal interference propagation and coupling.
- FN 2415 B version without leakage current (0 mA)
- FN 2415 L version with leakage current of less than 3.5 mA.
- 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
- By providing a very decent attenuation performance, FN 2415 contributes significantly to the achievement of electromagnetic compliance, e.g. EN50370-1 standards for machine tools.

Typical applications

Ideal for industrial equipment, machinery and diverse process automation systems, which involve any kind of control units (NC, CNC, Motion- and Robot Controls).
Large and complex machine tools with multiple driving axes and very long motor cables can be subjected to major reliability problems, provoked and by internal coupling of interferences from the drive system to the control wires.
This can cause drop outs and interrupts of the control unit and consequently lead to unnecessary downtimes of the entire machine. FN 2415 can also be used for most diverse single-phase applications, e.g. motor drives and power supplies.

Typical electrical schematic



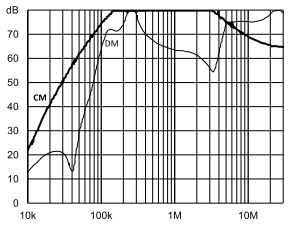
Filter selection table

Filter	Buy	Rated current @40°C (25°C) [A]	Leakage current* 250VAC/50Hz (120VAC/60Hz) [mA]	Power loss [W]	Inductance** L [mH]***	Capacitance** Cx [µF]	Capacitance** Cy [nF]	Resistance** R [kΩ]	Input/Output	Weight [kg]
FN2415-6-29		6 (6.6)	7.85 (4.52)	2.2	8	3.3	100	220	-29	0.4
FN2415-10-29		10 (11)	7.85 (4.52)	2.4	4.2	3.3	100	220	-29	0.4
FN2415-16-29		16 (17.5)	7.85 (4.52)	4.3	3	3.3	100	220	-29	0.4
FN2415B-6-29		6 (6.6)	0.00 (0.00)	2.2	8	3.3		220	-29	0.4
FN2415B-10-29		10 (11)	0.00 (0.00)	2.4	4.2	3.3		220	-29	0.4
FN2415B-16-29		16 (17.5)	0.00 (0.00)	4.3	3	3.3		220	-29	0.4
FN2415L-6-29		6 (6.6)	2.59 (1.49)	2.2	8	3.3	33	220	-29	0.4
FN2415L-10-29		10 (11)	2.59 (1.49)	2.4	4.2	3.3	33	220	-29	0.4
FN2415L-16-29		16 (17.5)	2.59 (1.49)	4.3	3	3.3	33	220	-29	0.4

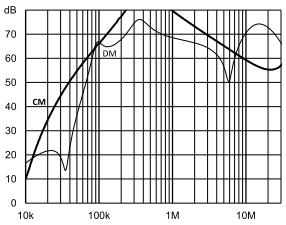
* Maximum leakage under normal operating conditions (acc. to IEC60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level.
** Tolerances apply: Inductance: -30/+50%, Capacitance: ±20%, Resistance: ±10%
*** Value of both inductors in the same

Typical filter attenuation

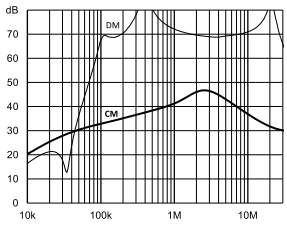
Per CISPR 17; DM (differential mode) =50 Ω/50 Ω sym; CM (common mode)=50 Ω/50 Ω asym



6 A: Standard type



L type



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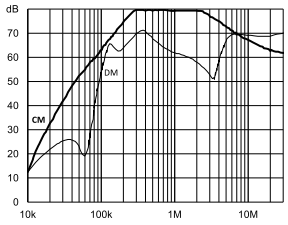

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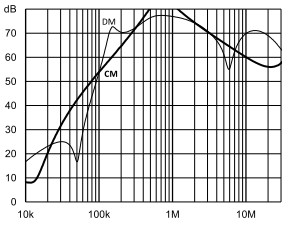

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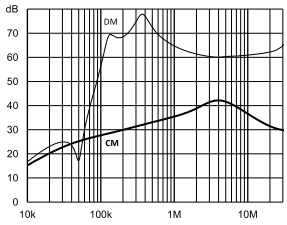

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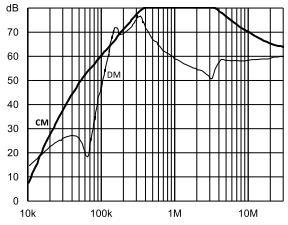
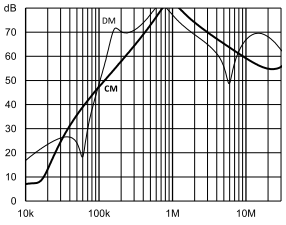


16 A: Standard type



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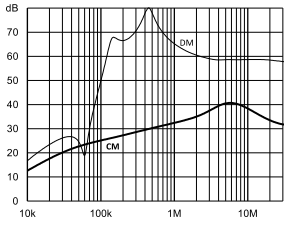
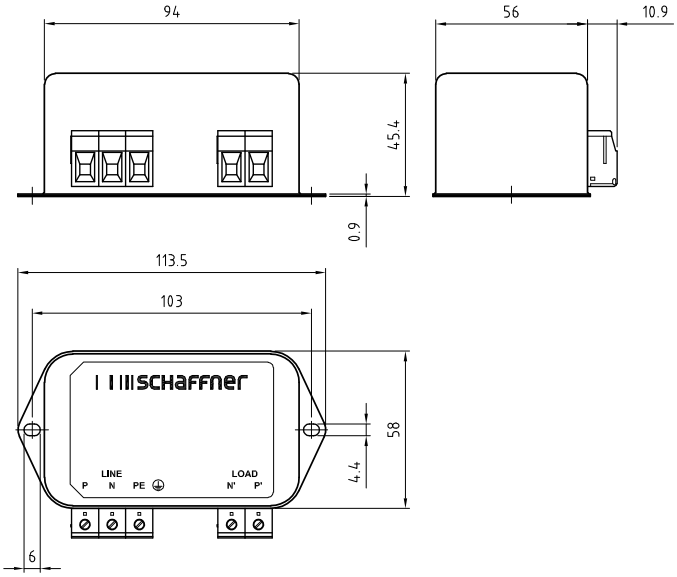


B type

Mechanical Data



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

Filter input/output connector cross sections

	-29 
Solid wire	6 mm^2
Flex wire	4 mm^2
AWG type wire	AWG 10
Recommended torque	0.6-0.8 Nm

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

Distribution inventory

Up-to-date inventory levels for global distributors is available at

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