

Single-Phase Filters FN 2415

SCHAFNER
energy efficiency and reliability

Single-phase Filter for the Control Line of Equipment



- Filter for the control line of complex equipment and machinery
- Ensures the interference-free operation of the control unit / PLC
- Improves the immunity and reliability of the entire system
- Compact EMC filter design with minimum space requirement

Approvals



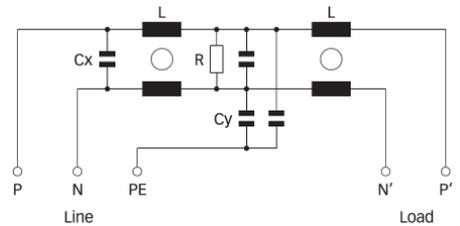
Technical specifications

Maximum continuous operating voltage:	250VAC (230VAC +10% possible)
Operating frequency:	dc to 60Hz
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:	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/230V (Mil-HB-217F):	>1,300,000 hours

Features and benefits

- An additional filter for the supply cables of controls of rather large and complex systems, to ensure a fault free operation of the control unit (PLC, Motion Control etc.).
- Improves the immunity, reliability and service security of the entire system significant by reducing the risk of internal interference propagation and coupling.
- Improves the immunity, reliability and service security of the entire system significant by reducing the risk of internal interference propagation and coupling.
- 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 for machine tools and industrial equipment.
- By providing a very decent attenuation performance, FN 2415 contributes significant to the achievement of electromagnetic compliance according to the last standards (like EN 50370-1 for machine tools).

Typical electrical schematic



Typical applications

Ideal for industrial equipment, machinery and diverse process automation systems, which involve any kind of control units (NC, CNC, PLC, Motion Controls). Rather large and complex machine tools, with 8 or even more driving axes and very long motor cables, can be subjected to major reliability problems, caused by internal coupling of interferences from the drive system to the control lines. Very often, this causes a drop out of the control unit and consequently downtimes of the entire machine. By operating an FN 2415 in addition to a mains input filter, these negative effects can be eliminated for most situations. FN 2415 can also be used for the most diverse single-phase applications with medium to high interference levels, such as single-phase motor drives or power supplies.

Filter selection table

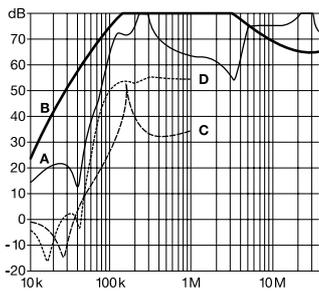
Filter	Rated current @ 50°C (40°C)	Leakage current* @ 250VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections	Weight
	[A]	[mA]	[W]		
FN 2415-6-29	6 (6.6)	9.4	2.2	-29	0.4
FN 2415-10-29	10 (11)	9.4	2.4	-29	0.4
FN 2415-16-29	16 (17.5)	9.4	4.3	-29	0.4

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

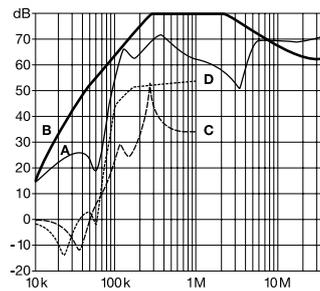
Typical filter attenuation

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

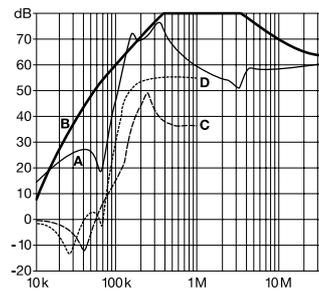
6A types



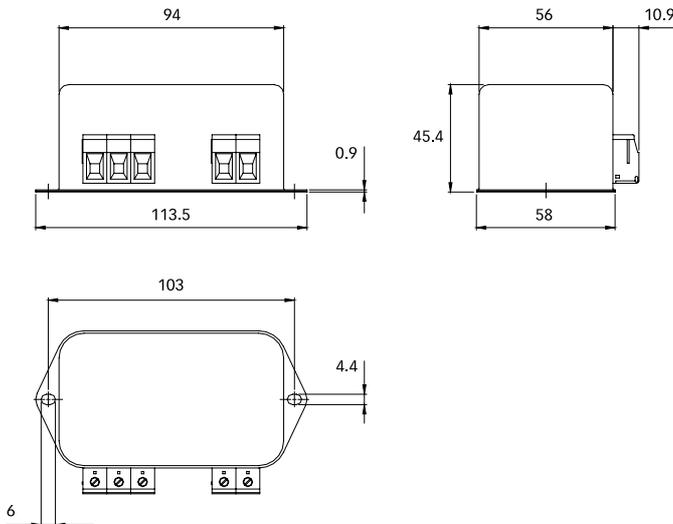
10A types



16A types



Mechanical data



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

Filter input/output connector cross sections

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

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

**Headquarters, global
innovation and
development center**

Schaffner Group

Nordstrasse 11
4542 Luterbach
Switzerland
T +41 32 681 66 26
F +41 32 681 66 30
info@schaffner.com
www.schaffner.com

To find your local partner within
Schaffner's global network,
please go to:
www.schaffner.com

© 2014 Schaffner Group
The content of this document
has been carefully checked and
understood. However, neither
Schaffner nor its subsidiaries
assume any liability whatsoever
for any errors or inaccuracies of
this document and the
consequences thereof. Published
specifications are subject to
change without notice. Product
suitability for any area of
application must ultimately be
determined by the customer. In
all cases, products must never
be operated outside their
published specifications.
Schaffner does not guarantee
the availability of all published
products. This disclaimer shall
be governed by substantive
Swiss law and resulting disputes
shall be settled by the courts at
the place of business of
Schaffner Holding AG. Latest
publications and a complete
disclaimer can be downloaded
from the Schaffner website. All
trademarks recognized.

Sales and application centers

China

Schaffner EMC Ltd. Shanghai
T20-3, No 565 Chuangye Road
Pudong New Area
201201 Shanghai
T +86 21 3813 9500
F F +86 21 3813 9501 / 02
cschina@schaffner.com
<http://www.schaffner.com.cn/>

Finland

Schaffner Oy
Sauvonrinne 19 H
08500 Lohja
T +358 19 35 72 71
finlandsales@schaffner.com

France

Schaffner EMC S.A.S.
112, Quai de Bezons
Boîte postale 133
95103 Argenteuil
T +33 1 34 34 30 60
F +33 1 39 47 02 28
francesales@schaffner.com

Italy

Schaffner EMC S.r.l.
Via Galileo Galilei 47
20092 Cinisello Balsamo (MI)
T +39 02 66 04 30 45/47
F +39 02 61 23 943
italysales@schaffner.com

Japan

Schaffner EMC K.K.
1-32-12, Kamiuma, Setagaya-ku
7F Mitsui-seimei Sangenjaya Bldg.
154-0011 Tokyo
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
<http://www.schaffner.jp>

Singapore

Schaffner EMC Pte Ltd.
Blk 3015A Ubi Road 1
05-09 Kampong Ubi Industrial Estate
408705 Singapore
T +65 6377 3283
F +65 6377 3281
singaporesales@schaffner.com

Germany

Schaffner Deutschland GmbH
Schoemperlenstrasse 12B
76185 Karlsruhe
T +49 721 56910
F +49 721 569110
germanysales@schaffner.com

Spain

Schaffner EMC España
Calle Caléndula 93, Miniparc III, Edificio
E
El Soto de la Moraleja Alcobendas
28109 Madrid
T +34 618 176 133
spainsales@schaffner.com

Sweden

Schaffner EMC AB
Turebergstorg 1, 6
19147 Sollentuna
T +46 8 5792 1121 / 22
F +46 8 92 96 90
swedensales@schaffner.com

Switzerland

Schaffner EMV AG
Nordstrasse 11
4542 Luterbach
T +41 32 6816 626
F +41 32 6816 641
sales@schaffner.ch

Taiwan R.O.C.

Schaffner EMV Ltd.
6 Floor, No. 413
Rui Guang Road
114 Neihu District Taipei City
T +886 2 87525050
F +886 2 87518086
taiwansales@schaffner.com

Thailand

Schaffner EMC Co. Ltd.
Northern Region Industrial Estate
67 Moo 4 Tambon Ban Klang Amphur
Muangng P.O. Box 14
51000 Lamphun
T +66 53 58 11 04
F +66 53 58 10 19
thailandsales@schaffner.com

UK

Schaffner Ltd.
5 Ashville Way
Molly Millars Lane Wokingham
RG41 2PL Berks hire
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com
<http://www.schaffner.uk.com>

USA

Schaffner EMC Inc.
52 Mayfield Avenue
08837 Edison
T 1-800-367-5566
T 732-225-9533
F 732-225-4789
usasales@schaffner.com
<http://www.schaffner.com/us>