

Current-compensated Chokes

SCHAFFNER
energy efficiency and reliability



- Rated currents from 0.3 to 10A
- DC to 1kHz frequency
- 100kHz to 3MHz common-mode resonance frequency
- Dual-choke configurations
- Multiple PCB-mounting options

Approvals



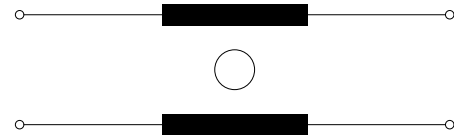
VDE: excluding RN 102, RN 202



Technical specifications

Maximum continuous operating voltage:	250VAC @ 40°C
Operating frequency:	dc to 1kHz
Rated currents:	0.3 to 10A @ 40°C max.
High potential test voltage winding-to-winding @ 25°C:	1500VAC, 60 sec, guaranteed
	1500V, 50Hz, 2 sec, factory test
winding-to-housing @ 25°C:	4000VAC, 60 sec, guaranteed
Surge current @ 10msec:	20 x I _{nominal} @ 25°C
Temperature range (operation and storage):	-40°C to +125°C (40/125/56)
Flammability corresponding to:	UL 94V-0
MTBF @ 40°C/230V (Mil-HB-217F):	> 5,000,000 hours

Typical electrical schematic



RN chokes are attenuating common-mode or asymmetric (P/N → E) interference signals, by being connected in series with the phase and neutral lines of an AC powerline input. Symmetrical components of the noise are also attenuated by the leakage inductance of the windings. These chokes are typically used in conjunction with suppression capacitors.

Features and benefits

- High saturation resistance and excellent thermal behavior.
- Through hole pin connections.
- Dual-choke configuration.
- Small compact design.
- Multiple housing options.
- Custom-specific versions are available on request.

Typical applications

- Phase-angle control circuits in combination with saturating chokes
- EMI input filters
- For suppressing equipment with no earth connection
- Suppressing high interference levels

Choke selection table

Choke*	Nominal current @ 40°C	Inductance L	Resistance R	Choke configuration	Input/Output connections	Type 1	Weight Type 2
	[A]	[mH/path]	[mΩ/path]	[Qty]		[g]	[g]
RN x02-0.3-02	0.3	12	1275	2	-02	2	3
RN x02-0.6-02	0.6	4.4	385	2	-02	2	3
RN x02-1-02	1	3	205	2	-02	2	3
RN x02-1.5-02	1.5	1.6	100	2	-02	2	3
RN x02-2-02	2	1.1	70	2	-02	2	3
RN x12-0.4-02	0.4	39	1460	2	-02	5	6
RN x12-0.5-02	0.5	27	1250	2	-02	5	6
RN x12-0.6-02	0.6	15	465	2	-02	5	6
RN x12-0.8-02	0.8	10	370	2	-02	5	6
RN x12-1.2-02	1.2	6.8	245	2	-02	5	6
RN x12-1.5-02	1.5	3.3	135	2	-02	5	6
RN x12-2-02	2	1.8	75	2	-02	5	6
RN x12-4-02	4	0.7	27	2	-02	5	6
RN x14-0.3-02	0.3	47	1750	2	-02	9	12
RN x14-0.5-02	0.5	39	810	2	-02	9	12
RN x14-0.8-02	0.8	27	500	2	-02	9	12
RN x14-1-02	1	15	375	2	-02	9	12
RN x14-1.2-02	1.2	10	200	2	-02	9	12
RN x14-1.5-02	1.5	6.8	130	2	-02	9	12
RN x14-2-02	2	4.2	102	2	-02	9	12
RN x14-2.5-02	2.5	3.3	72	2	-02	9	12
RN x14-3-02	3	2	55	2	-02	9	12
RN x14-4-02	4	1.5	35	2	-02	9	12
RN x22-0.6-02	0.6	47	1180	2	-02	17	21
RN x22-0.8-02	0.8	39	1000	2	-02	17	21
RN x22-1-02	1	18	610	2	-02	17	21
RN x22-1.5-02	1.5	10	220	2	-02	17	21
RN x22-2-02	2	6.8	147	2	-02	17	21
RN x22-2.5-02	2.5	5.6	105	2	-02	17	21
RN x22-3-02	3	4.5	80	2	-02	17	21
RN x22-4-02	4	3.3	45	2	-02	17	21
RN x42-0.5-02	0.5	82	2700	2	-02	32	32
RN x42-1-02	1	33	810	2	-02	32	32
RN x42-1.4-02	1.4	27	500	2	-02	32	32
RN x42-2-02	2	6.8	190	2	-02	32	32
RN x42-4-02	4	3.3	66	2	-02	32	32
RN x42-6-02	6	1.8	20	2	-02	32	32
RN 143-0.5-02	0.5	100	2900	2	-02	33	
RN 143-1-02	1	47	880	2	-02	33	
RN 143-2-02	2	10	230	2	-02	33	
RN 143-4-02	4	3.9	58	2	-02	33	
RN 143-6-02	6	1.8	20	2	-02	33	
RN 152-1-02	1	68	1300	2	-02	54	
RN 152-2-02	2	18	350	2	-02	54	
RN 152-4-02	4	6.8	87	2	-02	54	
RN 152-6-02	6	3.9	41	2	-02	54	
RN 152-8-02	8	2.7	22	2	-02	54	
RN 152-10-02	10	1.8	14	2	-02	54	

* Replace the x by the desired housing style type 1 or 2.



1: Choke horizontal



2: Choke vertical

Test conditions:

Measuring frequency: 10kHz; 5mA < 16μH; 500μA > 16μH < 160μH; 50μA > 160μH < 16mH; 50mV > 16mH < 160mH

Inductance tolerance: +50%, -30%

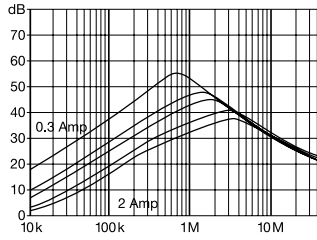
Resistance tolerance: max. ±15% @ 25°C; ≤ 20mΩ, 1A; > 20mΩ ≤ 200mΩ, 100mA; > 200mΩ ≤ 2Ω, 10mA

Electrical characteristics @ 25°C: ±2°C

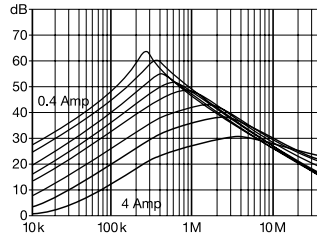
Typical choke attenuation/resonance frequency characteristics

Per CISPR 17; 50Ω/50Ω asym

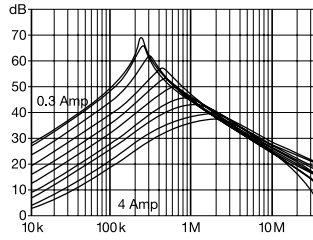
RN x02



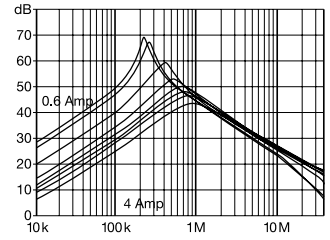
RN x12



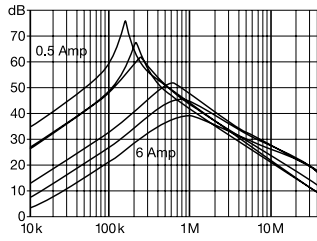
RN x14



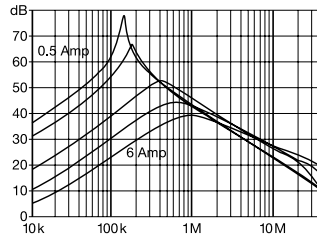
RN x22



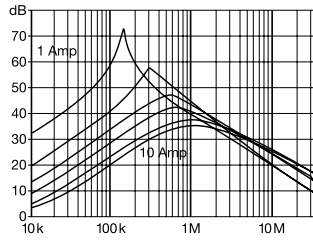
RN x42



RN 143



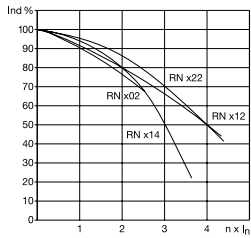
RN 152



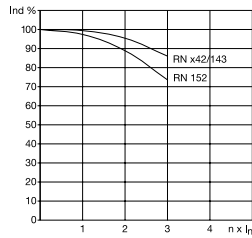
Typical saturation characteristics

Inductance (typical value in %) vs. nominal current (A DC)

RN x02 / RN x12 / RN x14 / RN x22

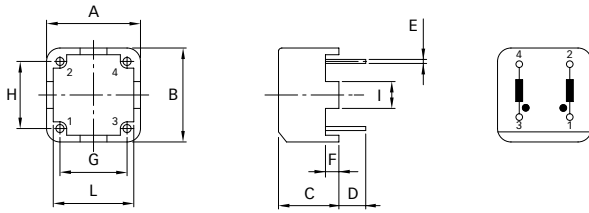


RN x42 / RN 143 / RN 152

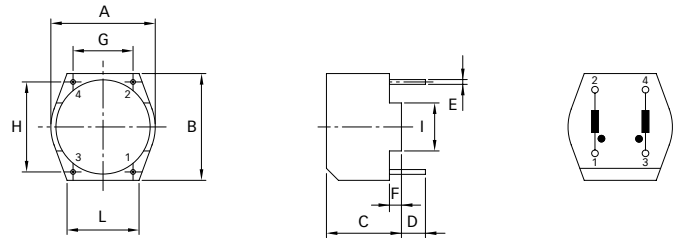


Mechanical data

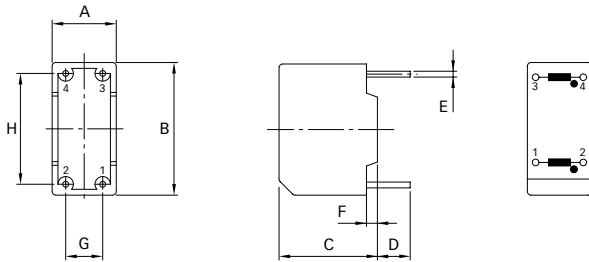
RN 102



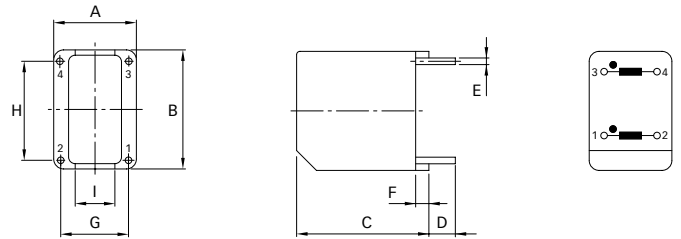
RN 112, RN 114, RN 122, RN 142, RN 143



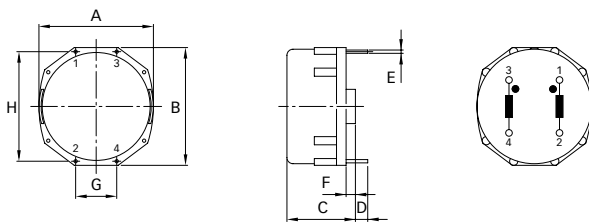
RN 202



RN 212, RN 214, RN 222, RN 242



RN 152



Dimensions

	RN 102	RN 112	RN 114	RN 122	RN 202	RN 212	RN 214	RN 222	RN 142	RN 143	RN 242	RN 152	Tol.
A	14	17.1	21.5	27	8.8	12.5	15.5	18	32.5	32.5	18	41.8	±0.3
B	14	17.7	22.5	28	18.2	18	23	31	33.1	33.1	31	43	±0.3
C	9	12.6	13.2	16.5	13.5	20	25	29.3	19.7	19.7	34.3	25	±0.3
D	4	4	4	4	4.5	4	4	4	4.3	4.3	4.2	4.5	±0.5
E	0.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2	±0.1
F	2	2			1.5	2						3.4	
G	10	10	12.5	15	5.08	10	12.5	15	20	20	15	15	±0.2
H	10	15	20.1	25	15.21	15	10	12.5	30	30	12.5	40	±0.2
I	4	8				6							
L	12	12											

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

**Headquarters and
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.ch
www.schaffner.com

Sales and application centers

China
Schaffner EMC Ltd. Shanghai
Building 11, Lane 1365
East Kangqiao Road
Shanghai 201319
T +86 21 6813 9855
F +86 21 6813 9811
cschina@schaffner.com
www.schaffner.com

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

Finland
Schaffner Oy
Tynninkuja 7
08700 Lohja
T +358 19 35 72 71
F +358 19 32 66 10
finlandsales@schaffner.com

France
Schaffner EMC S.A.S.
112, Quai de Bezons
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.
Mitsui-Seimei Sangenjaya Bldg. 7F
1-32-12, Kamiyama, Setagaya-ku
Tokyo 154-0011
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
www.schaffner.jp

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 32 681 66 26
F +41 32 681 66 41
sales@schaffner.ch

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

Taiwan
Schaffner EMV Ltd.
6th Floor, No 413
Rui Guang Road
Neihu District
Taipei City 114
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 Muang P.O. Box 14
Lamphun 51000
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
Berkshire RG41 2PL
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com
www.schaffner.uk.com

USA
Schaffner EMC Inc.
52 Mayfield Avenue
Edison, New Jersey 08837
T +1 732 225 9533
F +1 732 225 4789
usasales@schaffner.com
www.schaffner.com/us

To find your local partner within
Schaffner's global network, please go to

www.schaffner.com

May 2011

© 2011 Schaffner EMC.
Specifications subject to change without
notice. All trademarks recognized.

Schaffner is an ISO-registered company.
Its products are designed and manufac-
tured under the strict quality and environ-
mental requirements of the ISO 9001 and
ISO 14001 standards.

This document has been carefully
checked. However, Schaffner does not
assume any liability for errors or inac-
curacies.