

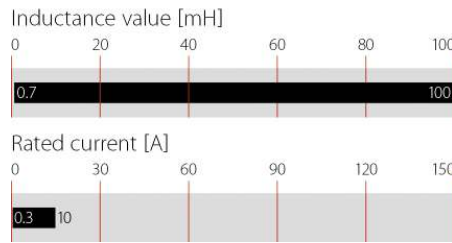
## Current-compensated Chokes



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



### Performance indicators



### Technical specifications

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

### Approvals



VDE: excluding RN 102, RN 202

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


### Typical electrical schematic



## Choke selection table

| Choke*        | Nominal current<br>@ 40 °C | Inductance<br>L | Resistance<br>R | Choke<br>configuration | Input/Output<br>connections   | Type 1 | Weight<br>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               |

### Choke selection table

| Choke*        | Nominal current<br>@ 40 °C | Inductance<br>L | Resistance<br>R | Choke<br>configuration | Input/Output<br>connections   | Type 1<br>[g] | Weight<br>Type 2<br>[g] |
|---------------|----------------------------|-----------------|-----------------|------------------------|---|---------------|-------------------------|
|               | [A]                        | [mH/path]       | [mΩ/path]       | [Qty]                  |  |               |                         |
| 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: 10 kHz; 50mV

Inductance tolerance: +50%, -30%

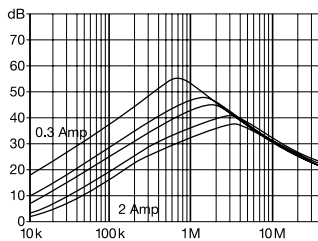
Resistance tolerance: max. ±15% @ 25 °C; < 20mΩ, 1 A; > 20mΩ ≤ 200mΩ, 100mA; > 200mΩ ≤ 2Ω, 10mA

Electrical characteristics @ 25 °C: ±2°C

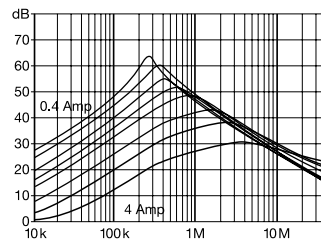
### Typical choke attenuation/resonance frequency characteristics

Per CISPR 17; 50 Ω/50 Ω asym

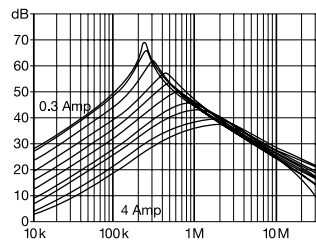
RN x02



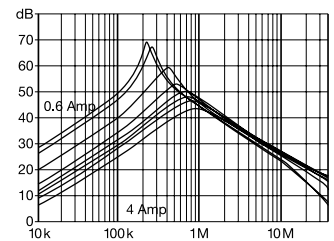
RN x12



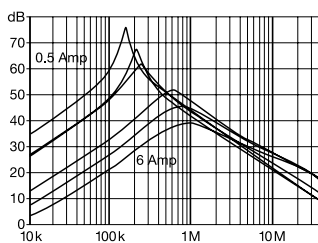
RN x14



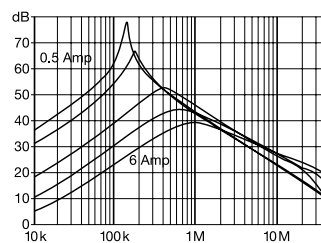
RN x22



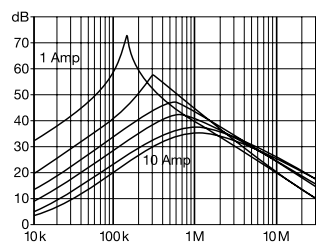
RN x42



RN 143



RN 152

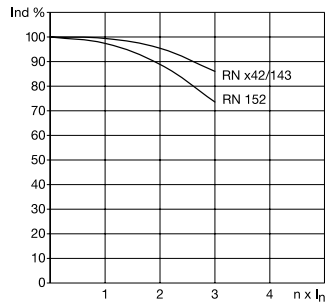
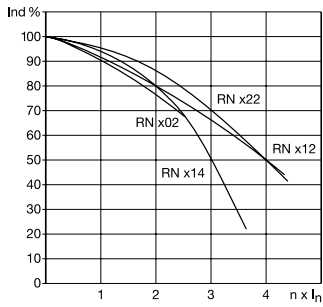


### Typical saturation characteristics

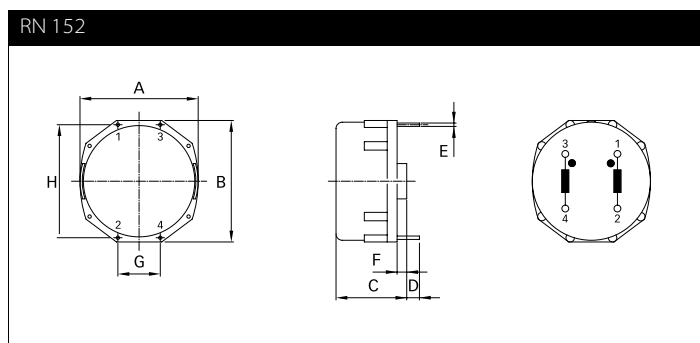
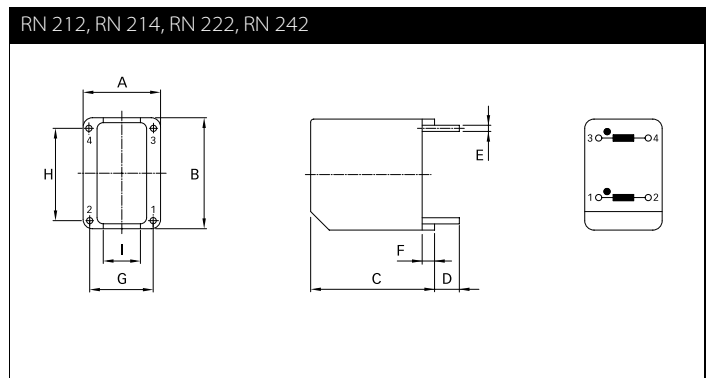
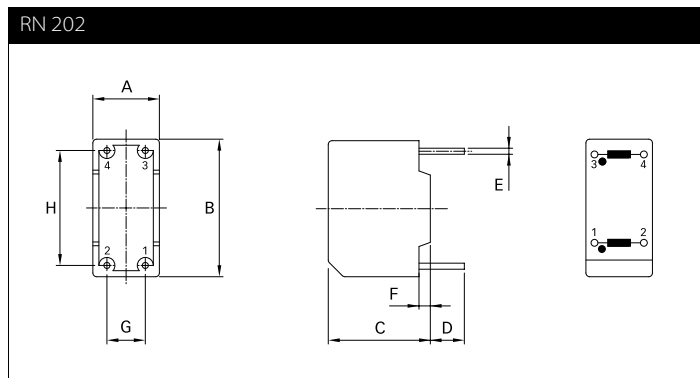
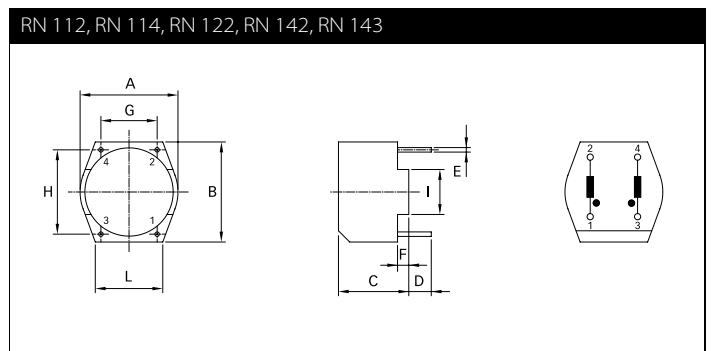
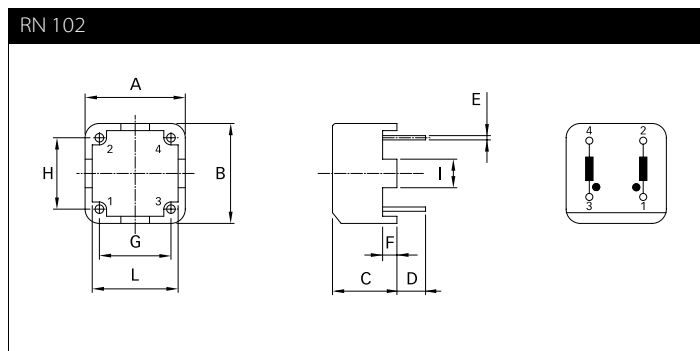
Inductance (typical value in %) vs. nominal current (A DC)

RN x02 / RN x12 / RN x14 / RN x22

RN x42 / RN 143 / RN 152



### Mechanical data



## Dimensions

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

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

Please visit [www.schaffner.com](http://www.schaffner.com) to find more details on filter connections.



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