

## Current-compensated Chokes



- | Rated currents from 16 to 50A
- | Up to 600VAC or 1000VDC
- | 2- and 3-wire configurations
- | Horizontal and vertical PCB mounting types
- | Ruggedized saturation and thermal behavior
- | Open construction for forced and convection cooling
- | Straightforward pin-out for easy PCB design

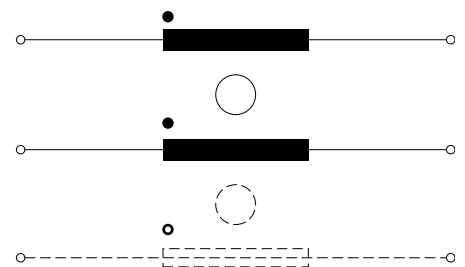
### Approvals

**RoHS**

### Technical specifications

Maximum continuous operating voltage:	600VAC / 1000VDC
Operating frequency:	DC to 400Hz
Rated currents:	16 to 50A @ 60°C max. convection cooling
High potential test voltage winding-to-winding @ 25°C:	2500VAC, 60 sec, guaranteed, 2 sec factory test
Temperature range (operation and storage):	-40°C to +125°C (40/125/21)
Flammability corresponding to:	UL 94V-0
Cooling:	convection/forced cooling
MTBF @ 40°C/230V (Mil-HB-217F):	> 5,000,000 hours

### Typical electrical schematic



RB common-mode chokes are mainly used to filter EMI noise on AC power lines up to 600VAC but they are as well applicable in DC power lines of photovoltaic installations or similar applications up to 1000VDC.

EMI noise of electronic equipment can go to the power lines and disturb the proper function of other devices like TV sets or radios.

Thus noise generated by the equipment from switched power electronics or by high slew rates of controllers needs to be filtered.

RB common-mode chokes are used to suppress EMI noise in PCB integrated filter designs with line bypass capacitors or in combination with single phase filters for extra low leakage filter designs.

### Features and benefits

- | Cost-effective PCB designs for up to 80A with forced cooling\*
- | Compact size and light weight
- | Low magnetic leakage flux
- | Excellent winding insulation
- | Standardized foot print
- | Broad range of inductance ratings
- | Custom-specific versions on request

\* See Application Note for forced cooling

### Typical applications

- | AC and DC filtering for midsize power range drives, photovoltaic inverters, fast chargers, charging stations, UPS and switch mode power supplies
- | Filter with low leakage current noise or improved immunity against grid disturbances
- | Electronic devices, automation
- | Converters

**RB Series**

Selection table	convection cooling nominal current @60° C	*forced cooling 3m/s nominal current @60° C	Inductance L @25°C	Resistance R @25°C	Choke	Ø Pin	Length Pin	Weight
	[A]	[A]	[mH/path]	[mΩ/path]	[size]	D [mm]	L [mm]	
RB6122-16-1M0	16	25	1.00	4.8	1	2.0±0.1	4.5±0.5	130
RB6122-25-0M6	25	39	0.64	2.7	1	2.4±0.1	4.5±0.5	135
RB6122-36-0M5	36	53	0.45	1.5	2	2.2±0.1	4.5±0.5	180
RB6122-50-0M3	50	80	0.25	0.9	2	2.5±0.1	5.0±0.5	172
RB6522-16-1M0	16	25	1.00	4.6	3	2.0±0.1	4.5±0.5	132
RB6522-25-0M6	25	39	0.64	2.6	3	2.4±0.1	4.5±0.5	126
RB6522-36-0M5	36	53	0.45	1.5	4	2.2±0.1	4.5±0.5	180
RB6522-50-0M3	50	80	0.25	0.9	4	2.5±0.1	5.0±0.5	175
RB8522-16-3M0	16	25	3.00	8.4	4	2.0±0.1	4.5±0.5	172
RB8522-25-2M0	25	39	2.00	4.2	5	2.6±0.1	5.0±0.5	268
RB8522-36-1M5	36	58	1.50	3.0	6	2.2±0.1	4.5±0.5	440
RB8522-50-0M8	50	83	0.75	1.7	6	2.5±0.1	5.0±0.5	430
RB6132-16-0M8	16	26.5	0.80	4.6	7	2.0±0.1	4.5±0.5	162
RB6132-25-0M5	25	41	0.47	2.4	7	2.5±0.1	5.0±0.5	175
RB6132-36-0M4	36	60	0.42	1.4	8	2.2±0.1	4.5±0.5	278
RB6132-50-0M2	50	81	0.18	0.9	8	2.5±0.1	5.0±0.5	264
RB6532-16-0M8	16	26.5	0.80	4.7	9	2.0±0.1	4.5±0.5	165
RB6532-25-0M5	25	41	0.47	2.4	9	2.5±0.1	5.0±0.5	180
RB6532-36-0M4	36	60	0.42	1.5	10	2.2±0.1	4.5±0.5	280
RB6532-50-0M2	50	81	0.18	0.8	10	2.5±0.1	5.0±0.5	268
RB8532-16-1M3	16	27	1.30	5.7	9	2.0±0.1	4.5±0.5	176
RB8532-25-0M9	25	41	0.94	3.0	11	2.6±0.1	5.0±0.5	282
RB8532-36-0M8	36	58	0.83	2.3	12	2.2±0.1	4.5±0.5	478
RB8532-50-0M3	50	82	0.33	1.2	12	2.5±0.1	5.0±0.5	442

**Test conditions:**

Measuring frequency: 1kHz; 500µA > 0.16mH < 1.6mH; 50µA > 1.6mH < 160mH

Inductance tolerance: +50%, -30%

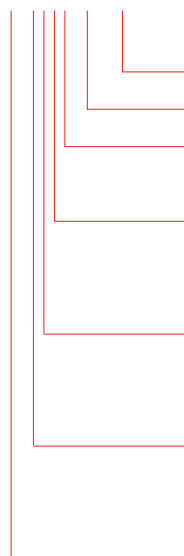
Resistance tolerance: max. ±15% @ 25°C; < 20mΩ 1A

Electrical characteristics @ 25°C: ±2°C

\* typical current for forced cooling with 3m/s. Due to the possible turbulences and degradation of the air stream within an equipment please consider thermal validation.

**Order Code:**

RB xxxx-xx-xmx



Inductance value (e.g. 9M6 = 9.6 mH)

Nominal input current [A] (convection cooling)

Terminal type ( 2 for PCB pin)

2 = 2-wire choke

3 = 3-wire choke

1 = Horizontal

5 = Vertical

8 = high inductance series

6 = low inductance series

Schaffner standard ring-core choke series RB

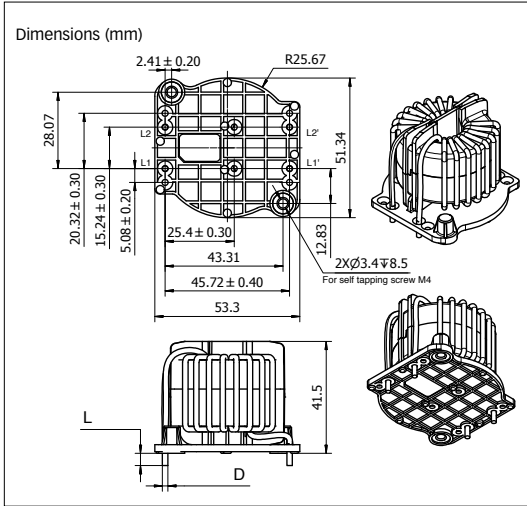
**Examples:**

RB8532-16-1M3: Vertical 3-wire high inductance choke with PCB pins, for 16A, with 1.3mH

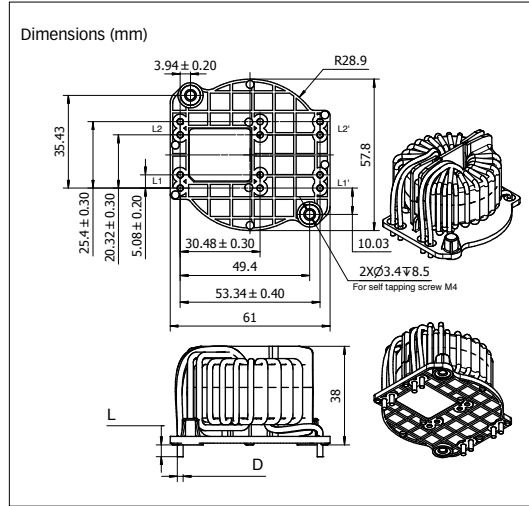
RB6122-50-0M3: Horizontal 2-wire low inductance choke with PCB pins, for 50A, with 0.3mH

1-phase /DC chokes

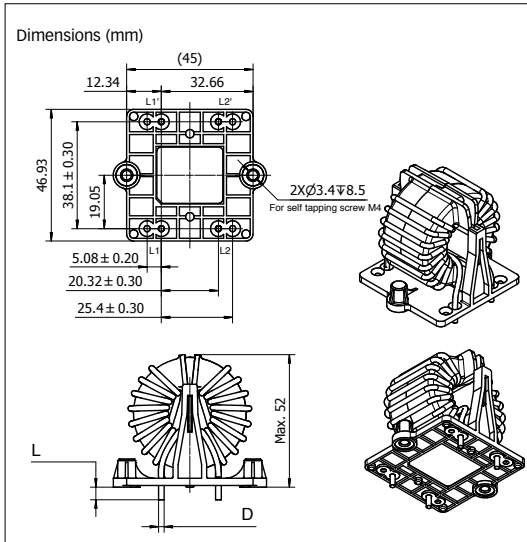
Size 1 (RB6122)



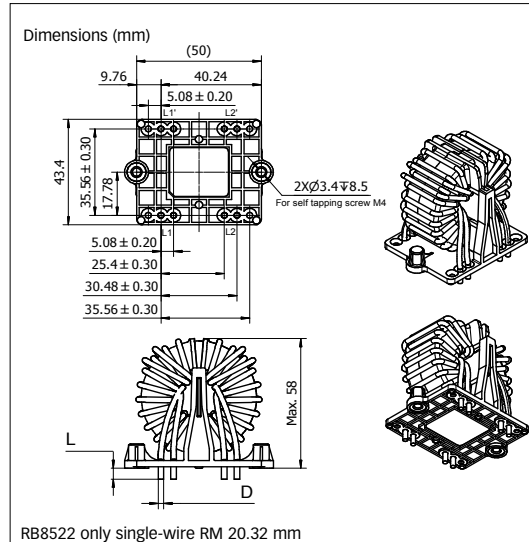
Size 2 (RB6122)



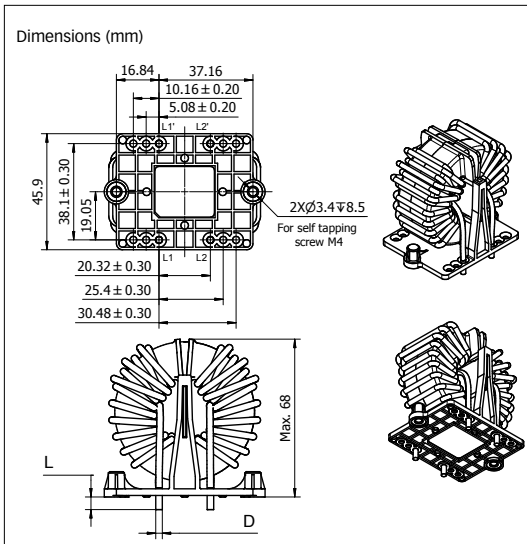
Size 3 (RB6522)



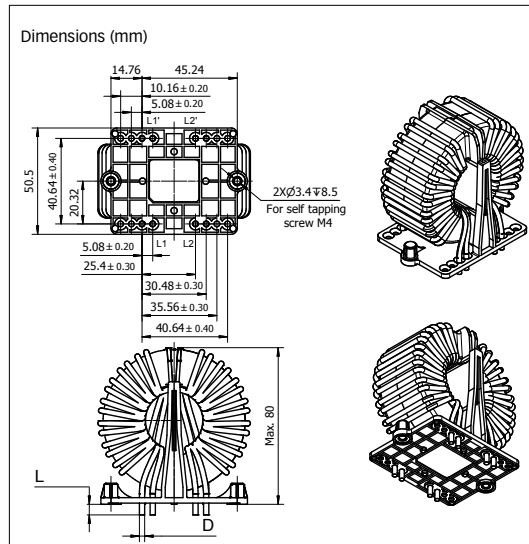
Size 4 (RB6522/RB8522)



Size 5 (RB8522)

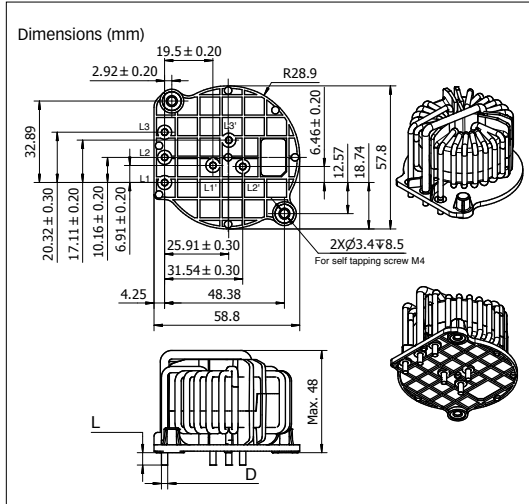


Size 6 (RB8522)

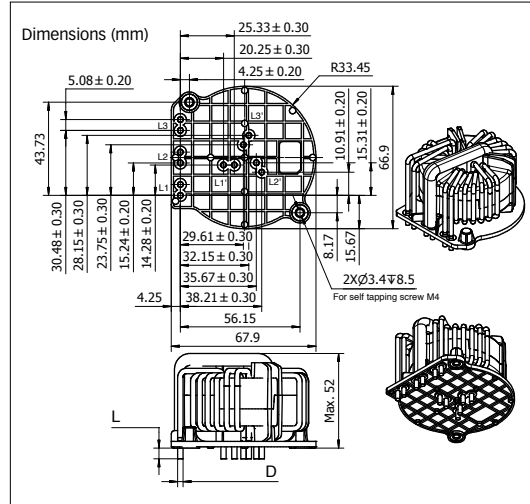


3-phase chokes

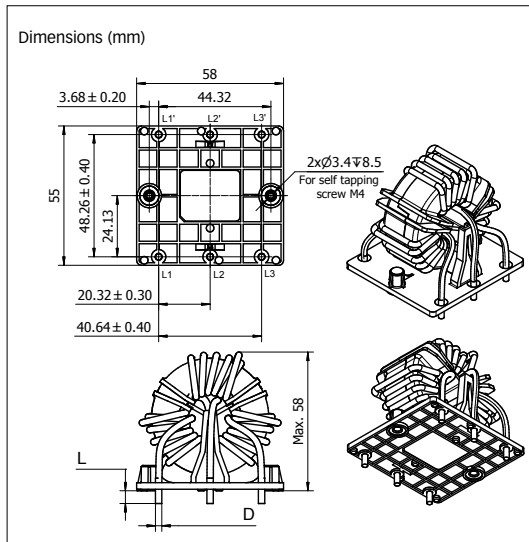
Size 7 (RB6132)



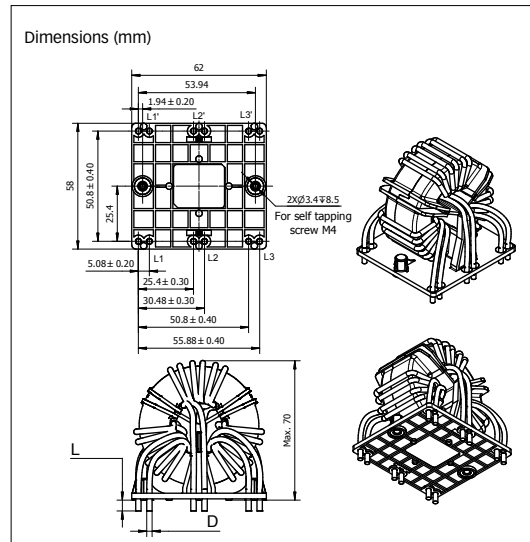
Size 8 (RB6132)



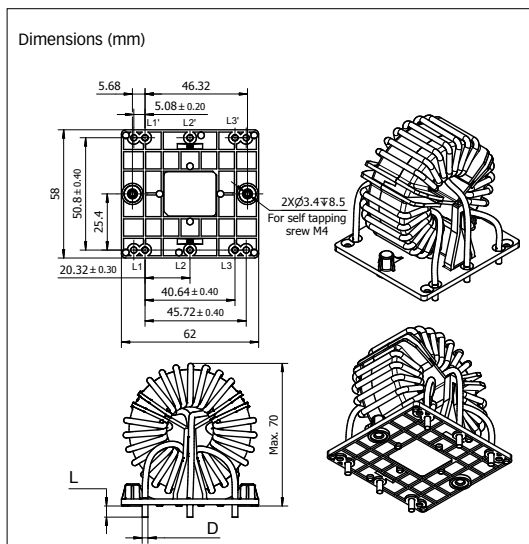
Size 9 (RB6532/RB8532)



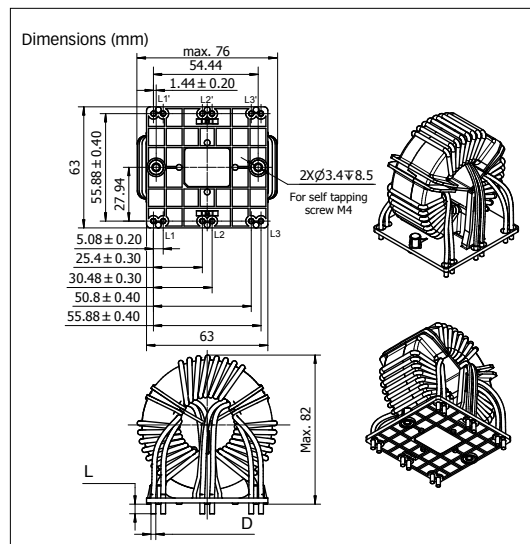
Size 10 (RB6532)



Size 11 (RB8532)



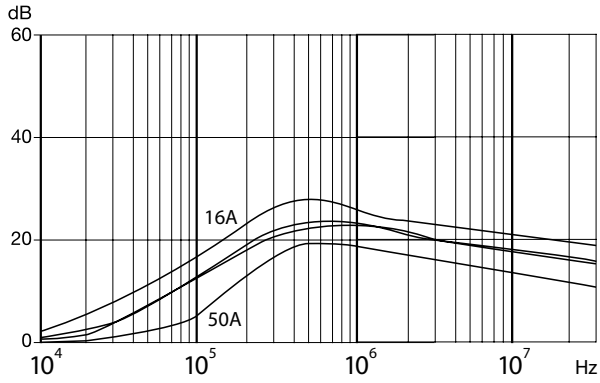
Size 12 (RB8532)



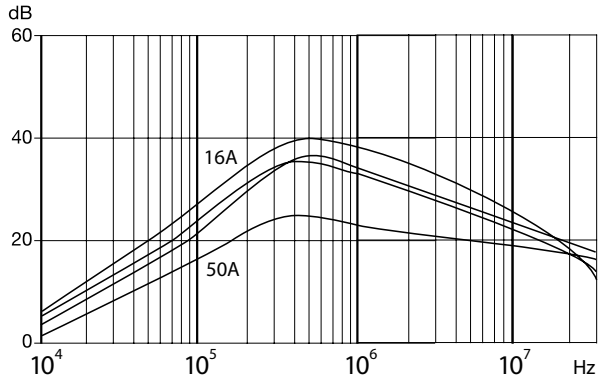
**Typical choke attenuation/resonance frequency characteristics**

Per CISPR 17; 50Ω/50Ω asym

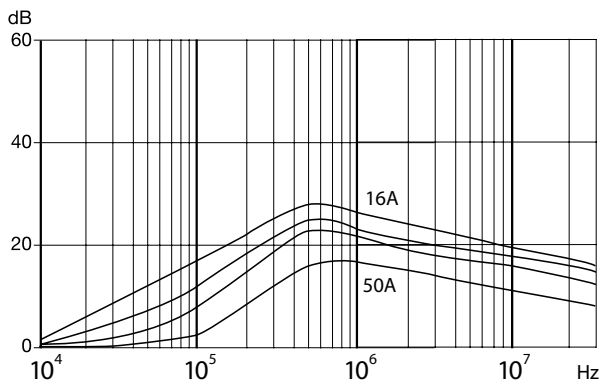
**RB6122, RB6522**



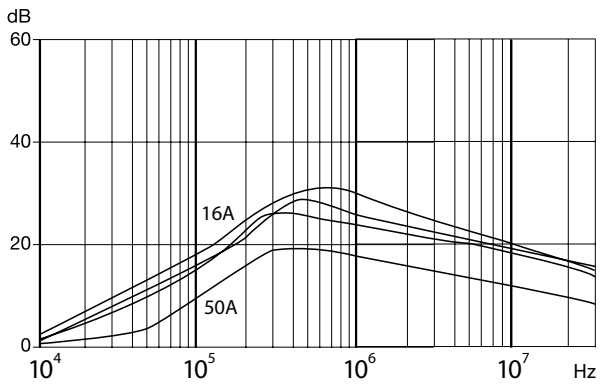
**RB8522**



**RB6132, RB6532**



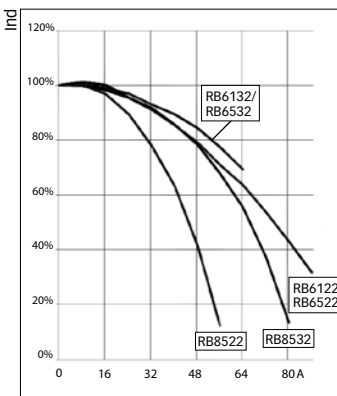
**RB8532**



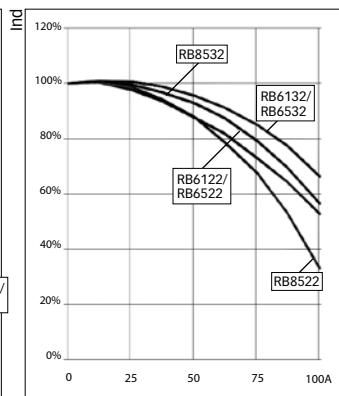
**Typical saturation characteristics**

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

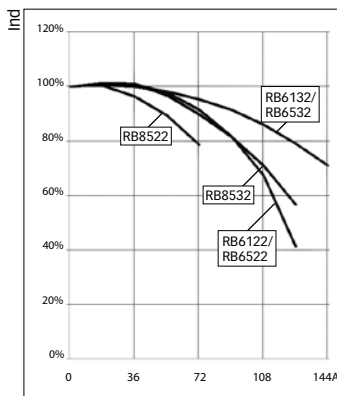
**16A**



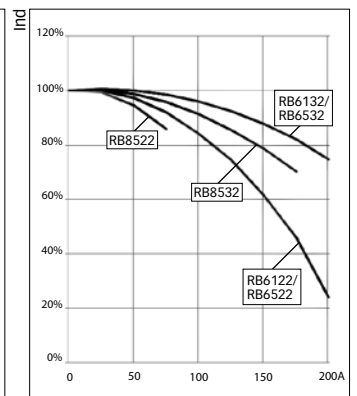
**25A**



**36A**



**50A**



**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](http://www.schaffner.com)

**Sales and application centers**

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

**Germany**  
**Schaffner Deutschland GmbH**  
Schoemperlenstrasse 12B  
76185 Karlsruhe  
T +49 721 56910  
F +49 721 569110  
germanysales@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, Kamiiuma, Setagaya-ku  
Tokyo 154-0011  
T +81 3 5712 3650  
F +81 3 5712 3651  
japansales@schaffner.com  
[www.schaffner.jp](http://www.schaffner.jp)

**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

**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

**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](http://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](http://www.schaffner.com/us)

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