

# Multi-stage High Performance AC/DC EMI Filter

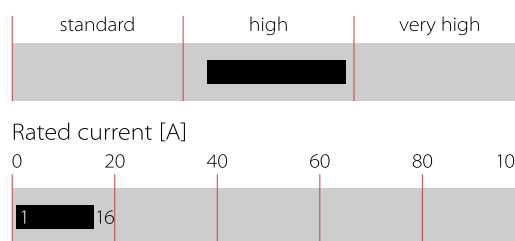


- Rated currents from 1 to 16 A
- High differential and common-mode attenuation
- Good low frequency attenuation
- Optional medical versions (B type)
- Optional safety versions (A type)



### Performance indicators

Attenuation performance



### Approvals & Compliances



### Features and Benefits

- FN 2080 two-stage filters are designed for easy and fast chassis mounting
- FN 2080 B versions without capacitors to earth comply to 1MOP for ME (medical equipment) acc. IEC 60601-1
- FN 2080 A version with low capacitance to earth for safety critical applications with necessity for low leakage currents
- All filters provide a high conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- FN 2080 two-stage filters are designed with good low frequency attenuation
- FN 2080 filters are also available as single-stage filters
- FN 2080 filters are also available with two common mode choke configuration (FN 2070 series)
- Various terminal options allow you to select the desired connection style

## Technical Specifications

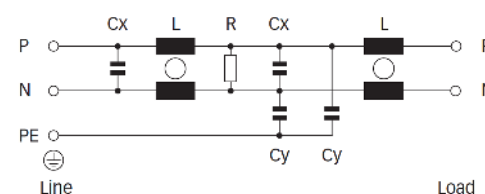
<b>Rated voltage*</b>	250 VAC, 50/60 Hz 250 VDC
<b>Operating frequency</b>	DC to 400 Hz
<b>Temperature range (operation and storage)</b>	-25°C to +100°C (25/100/21)**
<b>Certified to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939 (applies to AC and DC applications)
<b>Flammability corresponding to</b>	Laces for -07 version: UL 94 VW-1 Terminal plastic for -06/-08 version: UL 94 V-0 Grommet for -07 version: UL 94 V-0
<b>Design corresponding to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
<b>Overtoltage category</b>	II acc. IEC 60664-1
<b>Pollution degree</b>	2 acc. IEC 60664-1
<b>Altitude</b>	2000m (above derating applies)**
<b>Rated currents</b>	1 to 16 A @ 40°C max
<b>High potential test voltage</b>	P -> PE 2000 VAC for 2 sec P -> PE 2500 VAC for 2 sec (B types) P -> N 1100 VDC for 2 sec

\* maximum RMS operating voltage at rated frequency or the maximum DC operating voltage  
 \*\* for dedicated requests exceeding this specification (e.g. -40 °C or higher altitude) please contact your local Schaffner Sales office




## Typical Applications

- Electrical and electronic equipment
- Lighting applications (due to high differential mode inductance)
- Consumer goods
- Household equipment
- Building automation
- Industrial applications
- Machinery
- Medical equipment
- Electronic data processing equipment
- Office automation and datacom equipment
- Various noisy applications requiring good filter performance

### Typical electrical schematic



### Filter Selection Table

Filter*	Buy	Rated current @ 40°C (25°C)	Leakage current** @ 250 VAC/50 Hz (@ 120 VAC/60 Hz)	Power Loss @25°C/DC	Inductance***		Capacitance***		Resistance*** R	Input/Output connections			Weight [g]
					L	L1	Cx	Cy					
		[A]	[mA]	[W]	[mH]	[µH]	[µF]	[nF]	[kΩ]				
FN2080-1-..		1 (1.2)	0.66 (0.38)	2.6	22	490	0.33	4.7	1000	-06	-07		200
FN2080-3-..		3 (3.5)	0.66 (0.38)	3.7	9.8	160	0.47	4.7	470	-06	-07		270
FN2080-6-..		6 (6.9)	0.66 (0.38)	5.7	7.8	110	1	4.7	220	-06	-07		470
FN2080-10-..		10 (11.5)	0.66 (0.38)	8.6	4.5	60	1	4.7	220	-06	-07	-08	750
FN2080-12-..		12 (13.8)	0.66 (0.38)	12.3	3.25	50	1	4.7	220	-06	-07	-08	750
FN2080-16-..		16 (18.4)	0.66 (0.38)	9.0	2.8	43	1	4.7	220	-06	-07	-08	1020
FN2080A-1-..		1 (1.2)	0.07 (0.04)	2.6	22	490	0.33	0.47	1000	-06	-07		200
FN2080A-3-..		3 (3.5)	0.07 (0.04)	3.7	9.8	160	0.47	0.47	470	-06	-07		270
FN2080A-6-..		6 (6.9)	0.07 (0.04)	5.7	7.8	110	1	0.47	220	-06	-07		470
FN2080A-10-..		10 (11.5)	0.07 (0.04)	8.6	4.5	60	1	0.47	220	-06	-07	-08	750
FN2080A-12-..		12 (13.8)	0.07 (0.04)	12.3	3.25	50	1	0.47	220	-06	-07	-08	750
FN2080A-16-..		16 (18.4)	0.07 (0.04)	9.0	2.8	43	1	0.47	220	-06	-07	-08	1020
FN2080B-1-..		1 (1.2)	0.00	2.6	22	490	0.33		1000	-06	-07		200
FN2080B-3-..		3 (3.5)	0.00	3.7	9.8	160	0.47		470	-06	-07		270
FN2080B-6-..		6 (6.9)	0.00	5.7	7.8	110	1		220	-06	-07		470
FN2080B-10-..		10 (11.5)	0.00	8.6	4.5	60	1		220	-06	-07	-08	750
FN2080B-12-..		12 (13.8)	0.00	12.3	3.25	50	1		220	-06	-07	-08	750
FN2080B-16-..		16 (18.4)	0.00	9.0	2.8	43	1		220	-06	-07	-08	1020

\* To compile a complete part number, please replace the .. with the required I/O connection style (e.g. FN 2080-16-08, FN 2080B-10-06).

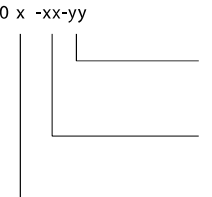
\*\* Maximum leakage under usual AC operating conditions (acc. IEC60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

\*\*\* Tolerances apply: Inductance: -30/+50%, Capacitance: ±20%, Resistance: ±10%

**Product selector**

FN 2080 x -xx-yy

06	Faston 6.3 × 0.8 mm (spade/soldering)
07	Wire leads
08	Studs (M4 screws)
1 to 16	Rated current
Blank	Standard version
A	Safety version
B	Medical version



Example:

**FN2080A-10-06**

- A: Safety version (A)
- 10 Ampère current
- 06: fast-on terminals

### Distribution Inventory

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

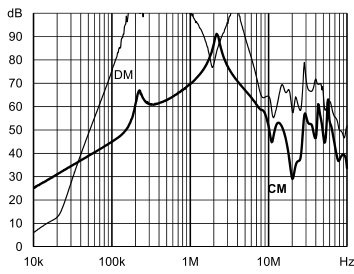
<https://products.schaffner.com/stock>

or via the QR code printed on the right side

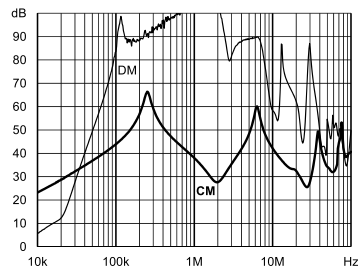


## Typical Filter Attenuation

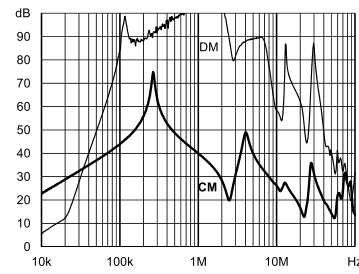
Per CISPR 17: symmetrical 50 Ω/50 Ω -> Differential Mode (DM); asymmetrical 50 Ω/50 Ω -> Common Mode (CM)



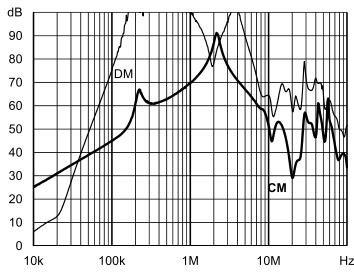
1 A: Standard type



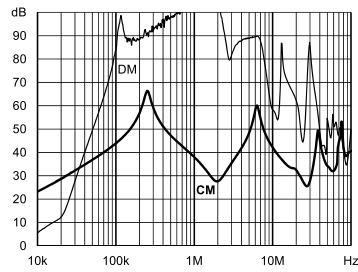
A type



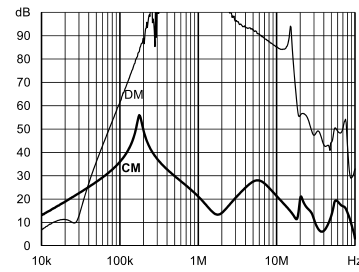
B type



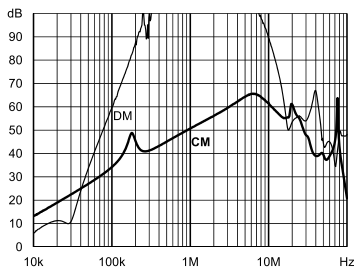
3 A: Standard type



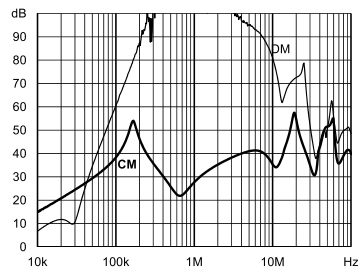
A type



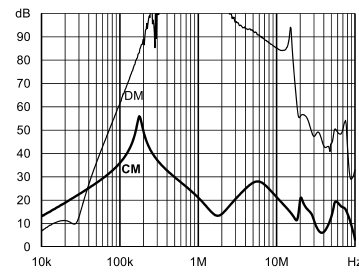
B type



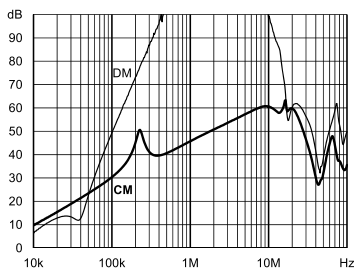
6 A: Standard type



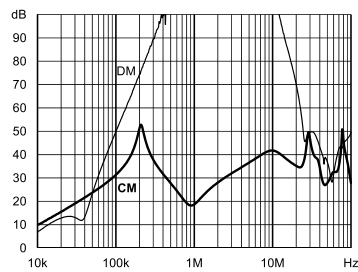
A type



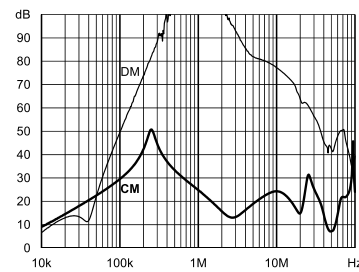
B type



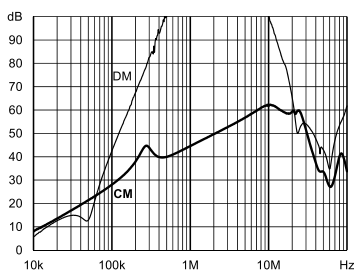
10 A: Standard type



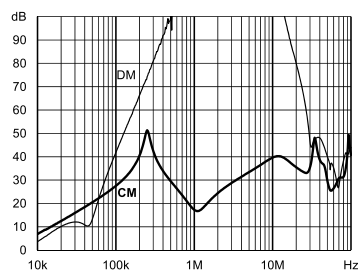
A type



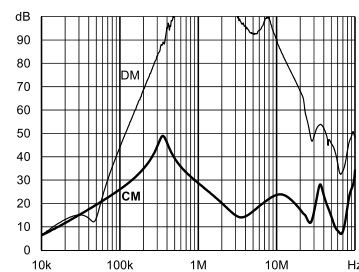
B type



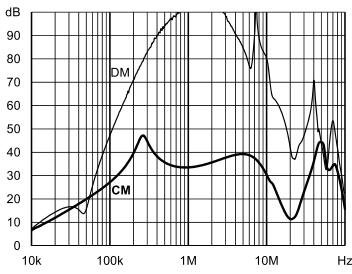
12 A: Standard type



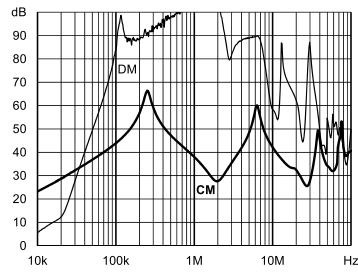
A type



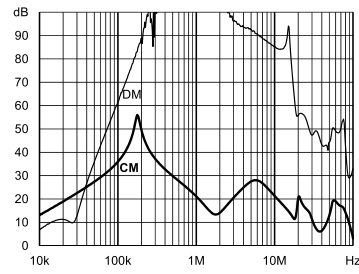
B type



16 A: Standard type

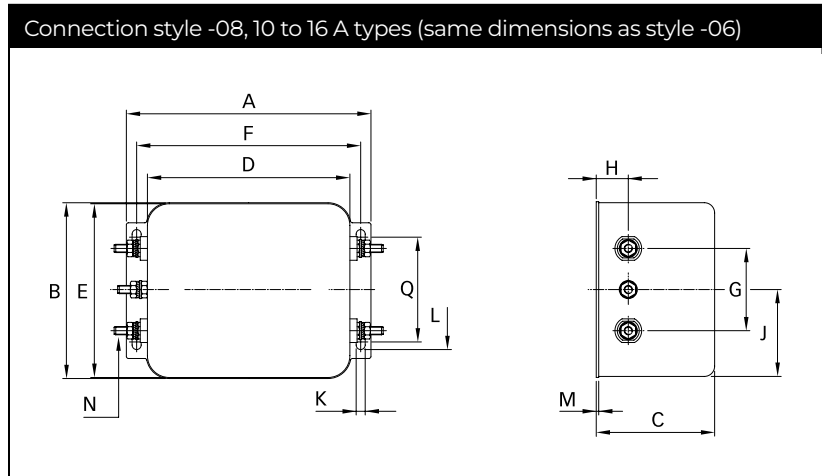
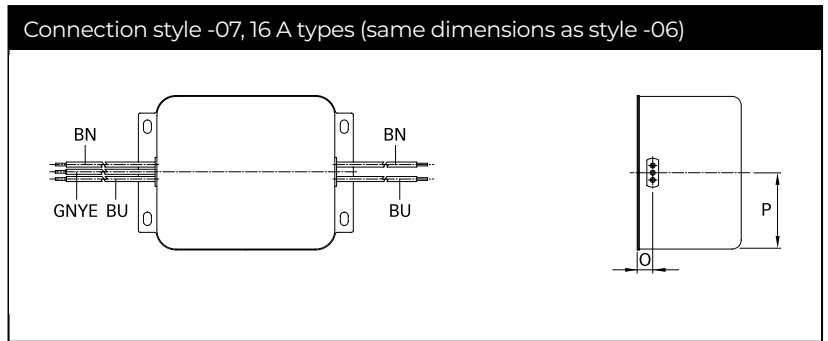
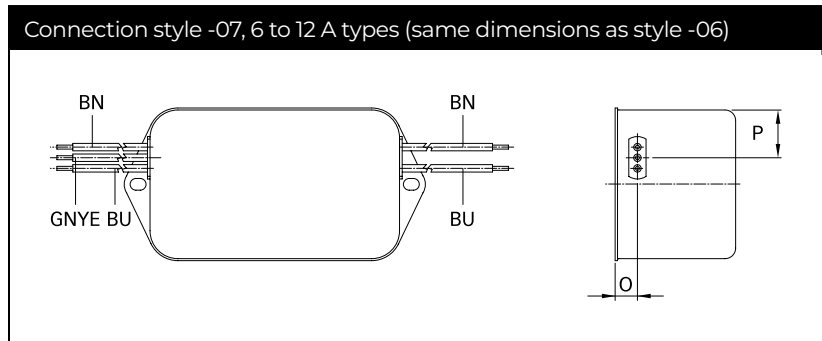
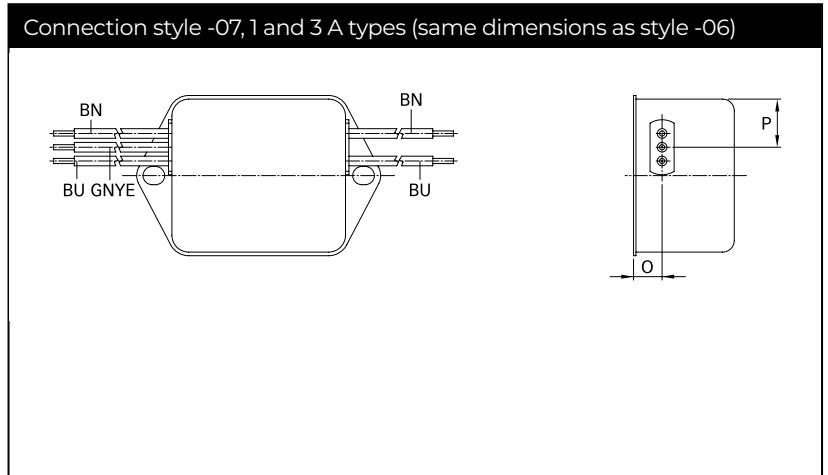
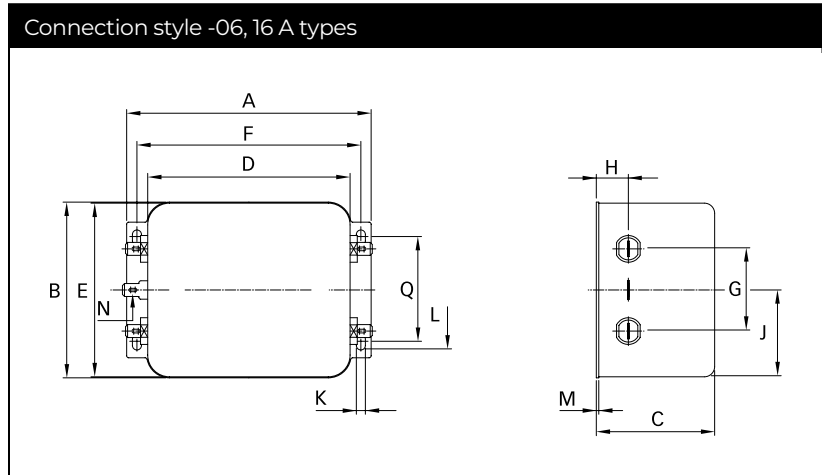
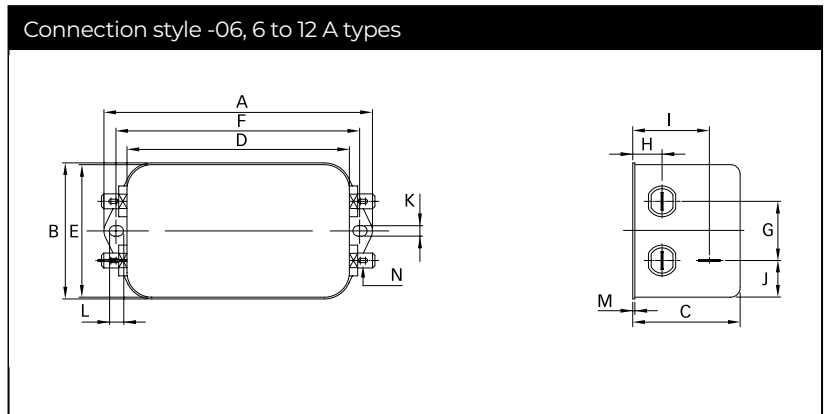
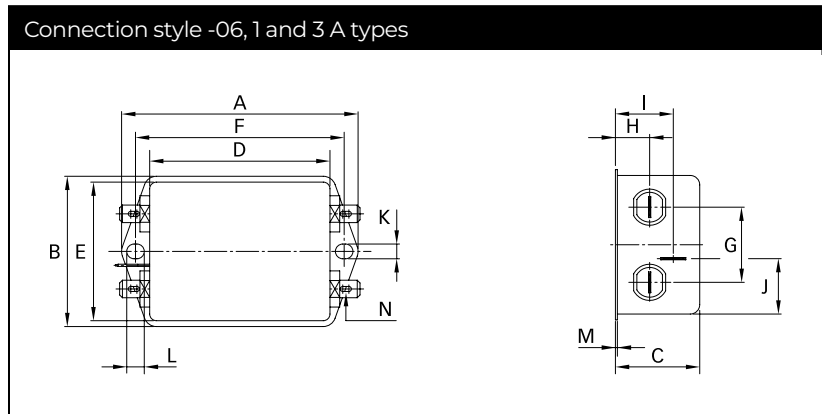


A type



B type

**Mechanical Data**



## Dimensions

	1 A	3 A	6 A	10 A	12 A	16 A	Tolerances
<b>A</b>	85	85	113.5 ±1	156 ±1	156 ±1	119 ±1	±0.5
<b>B</b>	54	54	57.5 ±1	57.5 ±1	57.5 ±1	85.5 ±1	±0.5
<b>C</b>	30.3	40.3	45.4 ±1	45.4 ±1	45.4 ±1	57.6 ±1	±0.5
<b>D</b>	64.8	64.8	94 ±1	130.5 ±1	130.5 ±1	98.5 ±1	±0.5
<b>E</b>	49.8	49.8	56	56	56	84.5	±0.5
<b>F</b>	75	75	103	143	143	109	±0.3
<b>G</b>	27	27	25	25	25	40	±0.2
<b>H</b>	12.3	12.3	12.4	12.4	12.4	15.6	±0.5
<b>I</b>	20.8	29.8	32.4	32.5	32.5		±0.5
<b>J</b>	19.9	11.4	15.5	15.5	15.5	42.25	±0.5
<b>K</b>	5.3	5.3	4.4	5.3	5.3	4.4	
<b>L</b>	6.3	6.3	6	6	6	7.4	
<b>M</b>	0.7	0.7	1	1	1	1.2	± 0.3
<b>Connection style -06</b>							
<b>N</b>	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	
<b>Connection style -07</b>							
<b>O</b>	8.3	8.3	8.4	8.4	8.4	8.6	±0.5
<b>P</b>	14.9	14.9	18	18	18	42.25	±0.5
<b>AWG type wire</b>	AWG 20	AWG 20	AWG 18	AWG 18	AWG 16	AWG 16	
<b>Wire length</b>	140	140	140	140	140	140	+5
<b>Connection style -08</b>							
<b>N</b>				M4	M4	M4	
<b>Q</b>						51	±0.2
<b>Recommended torque (Nm)</b>				1.2 - 1.3	1.2 - 1.3	1.2 - 1.3	
<b>Earth terminal</b>				1.5 - 1.7	1.5 - 1.7	1.5 - 1.7	

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 connectors.

## Headquarters, Global Innovation and Development

### Switzerland

#### Schaffner Group

Industrie Nord  
Nordstrasse 11e  
4542  
Luterbach  
+41 32 681 66 26  
[info@schaffner.com](mailto:info@schaffner.com)

## Sales and Application Centers

### Finland

#### Schaffner Oy

Sauvonrinne 19 H  
8500  
Lohja  
+358 50 468 7284  
[finlandsales@schaffner.com](mailto:finlandsales@schaffner.com)

### France

#### Schaffner EMC S.A.S.

16-20 Rue Louis Rameau  
95875  
Bezons  
+33 1 34 34 30 60  
[francesales@schaffner.com](mailto:francesales@schaffner.com)

### Germany

#### Schaffner Deutschland GmbH

Schoemperlenstrasse 12B  
76185  
Karlsruhe  
+49 721 56910  
[germanysales@schaffner.com](mailto:germanysales@schaffner.com)

### India

#### Schaffner India Pvt. Ltd

Regus World Trade Centre  
WTC 22nd Floor Unit No 2238 Brigade  
Gateway Campus 26/1 Dr. Rajkumar Road  
Malleshwaram (W)  
560055  
Bangalore  
+91 8067935355  
[indiasales@schaffner.com](mailto:indiasales@schaffner.com)

### United Kingdom

#### Schaffner Ltd.

Suite 1 Oakmede Place  
Terrace Road  
RG42 4JF  
Binfield  
+44 118 9770070  
[uksales@schaffner.com](mailto:uksales@schaffner.com)

### United States

#### Schaffner EMC Inc.

52 Mayfield Avenue  
Edison, New Jersey  
+1 732 225 9533  
[usasales@schaffner.com](mailto:usasales@schaffner.com)

### Sweden

#### Schaffner EMC AB

Östermalmstrorg 1  
114 42  
Stockholm  
+46 8 5050 2425  
[swedensales@schaffner.com](mailto:swedensales@schaffner.com)

### Switzerland

#### Schaffner EMV AG

Industrie Nord  
Nordstrasse 11e  
4542  
Luterbach  
+41 32 681 66 26  
[switzerlandsales@schaffner.com](mailto:switzerlandsales@schaffner.com)

### Taiwan

#### Schaffner EMV Ltd.

U-Town  
20 Floor-2 No 97 Section 1 XinTai 5th Road  
XiZhi District  
22175  
New Taipei City  
+886 226975500  
[taiwansales@schaffner.com](mailto:taiwansales@schaffner.com)

### Italy

#### Schaffner EMC S.r.l.

Via Ticino, 30  
20900  
Monza (MB)  
+39 039 21 41 070  
[italysales@schaffner.com](mailto:italysales@schaffner.com)

### Japan

#### Schaffner EMC K.K.

ISM Sangenjaya  
7F 1-32-12 Kamiyuma Setagaya-ku  
154-0011  
Tokyo  
+81 3 5712 3650  
[japansales@schaffner.com](mailto:japansales@schaffner.com)

### Singapore

#### Schaffner EMC Pte Ltd.

Blk 3015A Ubi Road 1 #05-09 Kampong Ubi  
Industrial Estate  
408705  
Singapore  
+65 63773283  
[singaporesales@schaffner.com](mailto:singaporesales@schaffner.com)

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