# **Excellent Performance EMC/EMI Filter**



| Superior attenuation performance |  |
|----------------------------------|--|
| Optional earth line choke        |  |

Complies with IEC/EN 60601-1 (B type)
Snap-in versions (S and S1 type)

Hot inlet versions (HI type)



### Performance indicators

#### Attenuation performance



### **Technical Specifications**

MTBF

| Maximum continuous operating voltage      | 250 VAC, 50/60 Hz  |  |  |
|---|--|--|--|
| Rated currents                            | 1 to 15 A @ 50°C max   |  |  |
| Operating frequency                       | DC to 400 Hz   |  |  |
| High potential test voltage               | P -> PE 2000 VAC for 2 sec (standard types)<br>P -> PE 2500 VAC for 2 sec (B types)<br>P -> N 1000 VAC for 2 sec |  |  |
| Temperature range (operation and storage) | -25°C to +85°C (25/85/21)  |  |  |
| Protection category                       | IP 40 according to IEC 60529   |  |  |
| Flammability corresponding to             | Plastic Material: UL 94 V-0<br>Laces for -07 version: UL 94 VW-1   |  |  |
| Approvals by rated current                | 1 to 10 A (ENEC, CQC)<br>1 to 15 A (UL, CSA)   |  |  |
| Design corresponding to                   | UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939   |  |  |

UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939 ≤8 A: 2,035,000 hours @ 40°C/230 V (Mil-HB-217F) ≤15 A: 1,035,000 hours @ 40°C/230 V (Mil-HB-217F)



(CQC except HI-types)

The FN 9244 IEC inlet filter combines an IEC inlet and mains filter with superior filter attenuation in a small form factor. Choosing the FN 9244 product line brings you the rapid availability of a standard filter associated with the necessary safety acceptances. Standard IEC connector filters are a practical solution helping you to pass EMI system approval in a short time. A wide selection on amperage ratings, output connections, mounting possibilities and filters for medical applications are designed to offer you the desired solution.

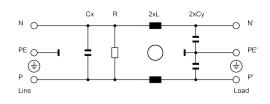
### **Features and Benefits**

- Exceptional conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- Rear/front or snap-in mounting
- Standard or wide mounting flange
- FN 9244 B versions comply with the
- requirements of 1MOP acc. to IEC/EN 60601-1 for creepage and clearance, leakage current and high potential testing
- Optional earth line choke see FN 9244 E data sheet
- Custom-specific versions are available on request

### **Typical Applications**

- Portable electrical and electronic equipment
- Small to medium-sized machines and household equipment
- Single-phase power supplies, switch-mode power supplies
- Test and measurement equipment
- Medical devices (MDD)
- In-vitro diagnostic medical devices (IVDD)
- Rack mounting equipment

#### Typical electrical schematic



# **Filter Selection Table**

| Filter           | Rated current | Leakage current*  | Inductance | ce Capacitance |      | Resistance | Output      | Weight |
|------------------|---------------|-------------------|------------|----------------|------|------------|-------------|--------|
|                  | @ 50°C (25°C) | @ 250 VAC/50 Hz   | L          | Сх             | Су   | R          | connections |        |
|                  |               | (@ 120 VAC/60 Hz) |            |                |      |            |             |        |
|                  |               |                   |            |                |      |            | Π           |        |
|                  | [ <b>A</b> ]  | [mA]              | [mH]       | [µF]           | [nF] | [kΩ]       |             | [g]    |
| FN9244x-1-06     | 1 (1.2)       | 0.31 (0.18)       | 59.53      | 0.1            | 2.2  |            | -06         | 38     |
| FN9244x-3-06     | 3 (3.5)       | 0.31 (0.18)       | 13.45      | 0.1            | 2.2  | -06        | 38          |        |
| FN9244x-6-06     | 6 (7.2)       | 0.31 (0.18)       | 4.1        | 0.1            | 2.2  | -06        | 38          |        |
| FN9244x-8-06     | 8 (10.6)      | 0.31 (0.18)       | 2.3        | 0.1            | 2.2  |            | -06         | 38     |
| FN9244x-10-06    | 10 (11.6)     | 0.31 (0.18)       | 1.02       | 0.1            | 2.2  |            | -06         | 38     |
| FN9244x-12-06    | 12 (12)       | 0.31 (0.18)       | 0.58       | 0.1            | 2.2  |            | -06         | 38     |
| FN9244x-15-06    | 15 (15)       | 0.31 (0.18)       | 0.4        | 0.1            | 2.2  |            | -06         | 38     |
| FN9244x-12-06HI  | 12 (12)       | 0.31 (0.18)       | 0.58       | 0.1            | 2.2  |            | -06         | 38     |
| FN9244x-15-06HI  | 15 (15)       | 0.31 (0.18)       | 0.4        | 0.1            | 2.2  |            | -06         | 38     |
|                  |               |                   |            |                |      |            |             |        |
| FN9244xR-1-06    | 1 (1.2)       | 0.31 (0.18)       | 59.53      | 0.1            | 2.2  | 1000       | -06         | 38     |
| FN9244xR-3-06    | 3 (3.5)       | 0.31 (0.18)       | 13.45      | 0.1            | 2.2  | 1000       | -06         | 38     |
| FN9244xR-6-06    | 6 (7.2)       | 0.31 (0.18)       | 4.1        | 0.1            | 2.2  | 1000       | -06         | 38     |
| FN9244xR-8-06    | 8 (10.6)      | 0.31 (0.18)       | 2.3        | 0.1            | 2.2  | 1000       | -06         | 38     |
| FN9244xR-10-06   | 10 (11.6)     | 0.31 (0.18)       | 1.02       | 0.1            | 2.2  | 1000       | -06         | 38     |
| FN9244xR-12-06   | 12 (12)       | 0.31 (0.18)       | 0.58       | 0.1            | 2.2  | 1000       | -06         | 38     |
| FN9244xR-15-06   | 15 (15)       | 0.31 (0.18)       | 0.4        | 0.1            | 2.2  | 1000       | -06         | 38     |
| FN9244xR-12-06HI | 12 (12)       | 0.31 (0.18)       | 0.58       | 0.1            | 2.2  | 1000       | -06         | 38     |
| FN9244xR-15-06HI | 15 (15)       | 0.31 (0.18)       | 0.4        | 0.1            | 2.2  | 1000       | -06         | 38     |
|                  |               |                   |            |                |      |            |             |        |
| FN9244xB-1-06    | 1 (1.2)       | 0.00              | 59.53      | 0.1            |      | 1000       | -06         | 38     |
| FN9244xB-3-06    | 3 (3.5)       | 0.00              | 13.45      | 0.1            |      | 1000       | -06         | 38     |
| FN9244xB-6-06    | 6 (7.2)       | 0.00              | 4.1        | 0.1            |      | 1000       | -06         | 38     |
| FN9244xB-8-06    | 8 (10.6)      | 0.00              | 2.3        | 0.1            |      | 1000       | -06         | 38     |
| FN9244xB-10-06   | 10 (11.6)     | 0.00              | 1.02       | 0.1            |      | 1000       | -06         | 38     |
| FN9244xB-12-06   | 12 (12)       | 0.00              | 0.58       | 0.1            |      | 1000       | -06         | 38     |
| FN9244xB-15-06   | 15 (15)       | 0.00              | 0.4        | 0.1            |      | 1000       | -06         | 38     |
| FN9244xB-12-06HI | 12 (12)       | 0.00              | 0.58       | 0.1            |      | 1000       | -06         | 38     |
| FN9244xB-15-06HI | 15 (15)       | 0.00              | 0.4        | 0.1            |      | 1000       | -06         | 38     |

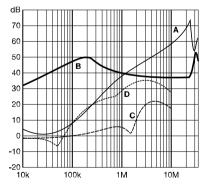
\* Maximum leakage under normal operating conditions (acc. to IEC60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

### **Typical Filter Attenuation**

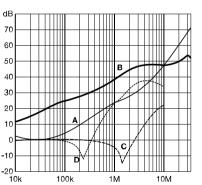
Per CISPR 17; A=50  $\Omega/50~\Omega$  sym; B=50  $\Omega/50~\Omega$  asym; C=0.1  $\Omega/100~\Omega$  sym; D=100  $\Omega/0.1~\Omega$  sym

1 and 3 A types

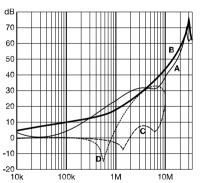
6



| 5 to 10 A types |  |
|-----------------|--|
|-----------------|--|



#### 12 and 15 A types



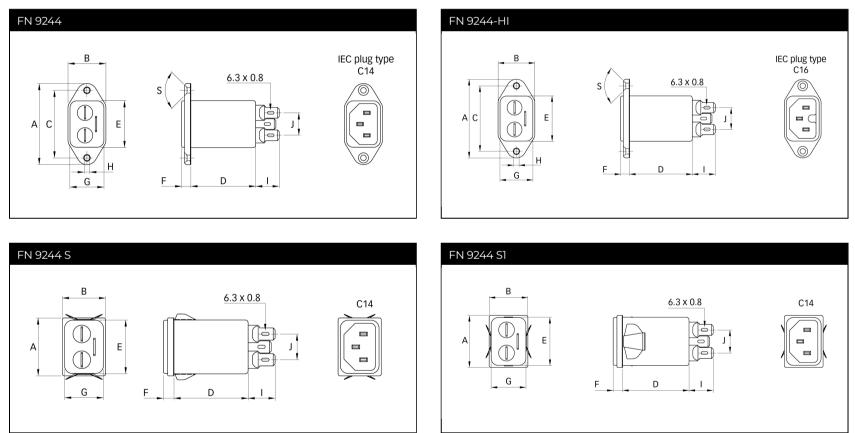
| Product selector   |                              |  | Distributor<br>Inventory   |      |  |  |
|--|------------------------------|--|--|------|--|--|
| FN 9244xx-yyHI-zz  |                              |  | Check stock levels at<br>global distributors via<br>the QR code                              | 3    |  |  |
|  | Snap-in ra                   | nge for S version only   |  | 3    |  |  |
|  | Blank:                       | Snap-in range 0.7 to 1.5mm                                     |  |      |  |  |
|  | 20:                          | Snap-in range 1.5 to 2.2mm                                     | LE102948   | 9Y   |  |  |
|  | Blank:                       | Standard IEC inlet type C14                                    |  |      |  |  |
|  | HI:                          | Hot IEC inlet type C16 (12 and 15A types only)                 | Search for the individual filter<br>at <u>https://products.schaffner.com/stock</u> (qr-code) |      |  |  |
|  | 06:                          | Faston 6.3 x 0.8mm (spade/soldering)                           | Wider range of stock level availability:   |      |  |  |
|  |                              |  | Stock level per types 1 - 15 A   | Link |  |  |
|  | 1 to 15:                     | Rated current  | Standard housing types   | ¥    |  |  |
|  |                              |  | Housing with wider mounting flanges (U)  | ¥    |  |  |
| Stock I     Stock I       Stock I     Stock I       1 to 15:     Rated current       Blank:     Standard version       R:     Bleed resistor | Snap-in housing types (S&S1) | ¥  |  |      |  |  |
|  | R:                           | Bleed resistor   | Medical versions (B)   | ¥    |  |  |
|  | B:                           | Medical version (with bleed resistor and without Y2-capacitor) | Bleed resistor types (R)   | ¥    |  |  |
| O  | Blank:                       | Standard housing with mounting flanges                         |  |      |  |  |
| $\odot$  | U:                           | Housing with wider mounting flanges                            |  |      |  |  |
|  | S:                           | Snap-in version, snapper on vertical side                      |  |      |  |  |

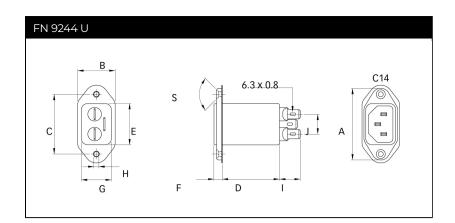
For example: FN 9244 B-15-06, FN 9244 S1B-10-06-20, FN 9244 R-12-06HI, FN 9244 UB-8-06

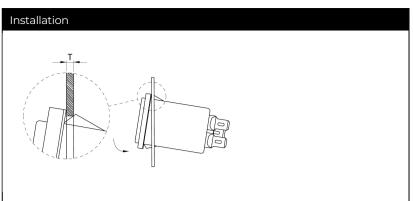
Snap-in version, snapper on horizontal side

### **Mechanical Data**

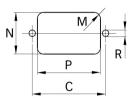
□ S1:







#### Panel cut out



### Dimensions

|     | FN 9244 | FN 9244 U | FN 92244 S | FN 92244 S1 | FN 9244-HI | Tol.    |
|-----|---------|-----------|------------|-------------|------------|---------|
| Α   | 48      | 48        | 29.9       | 29.9        | 48         |         |
| в   | 22.4    | 25        | 22.4       | 22.4        | 22.4       |         |
| с   | 40      | 40        |            |             | 40         | ±0.2    |
| D   | 38.25   | 38.25     | 38.25      | 38.25       | 38.25      |         |
| Е   | 27.8    | 27.7      | 27.8       | 27.8        | 27.8       | +0.6/-0 |
| F   | 5.7     | 5.7       | 5.7        | 5.7         | 5.7        |         |
| G   | 20.1    | 20.1      | 20.1       | 20.1        | 20.1       | +0.6/-0 |
| н   | Ø3.3    | Ø3.3      |            |             | Ø3.3       |         |
| 1   | 14      | 14        | 14         | 14          | 14         |         |
| J   | 13.3    | 13.3      | 13.3       | 13.3        | 13.3       |         |
| М   | R ≤3    | R ≤3      | R ≤1.5     | R ≤1.5      | R ≤3       |         |
| Ν   | 21.5    | 21.5      | 20.8       | 21.9        | 21.5       |         |
| Р   | 28.5    | 28.5      | 29.4       | 28.5        | 28.5       |         |
| R*  | MЗ      | M3        |            |             | M3         |         |
| S   | 90°     | 90°       |            |             | 90°        |         |
| T** |         |           | 0.7-1.5    | 0.7-1.5     |            |         |
| T** |         |           | 1.5-2.2    | 1.5-2.2     |            |         |

 $^{\ast}$  Recommended torque for M3 (90° countersunk flat head) is 0.5 Nm

 $\ensuremath{^{**}}$  For selecting the panel thickness, please refer to the filter selector table.

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

Please visit <u>www.schaffner.com</u> to find more details on connectors.

## Accessories

IL 13P IEC C13 Rewireable Connectors with Locking System



### IL 13P IEC C13 Rewireable Angled Connectors with Locking System



### Power Cord with angled Locking System C13



- Protects appliances that are vulnerable to vibration
- Connector cannot be accidentally pulled or vibrated out of the inlet
- Space availability/constraints
- Different angles for ease of access
- Space saving
- Release locking mechanism
- Prevents accidental disconnection

Technical Data Sheet >