

# IEC inlet filters FN 380

## Versatile filtered power entry module



- Rated currents up to 6A
- Single or dual-fuse holder
- Fuses Ø6.3 x 32mm or Ø5 x 20mm
- 2-pole rocker switch
- General purpose application
- Optional medical versions (B type)

### Approvals

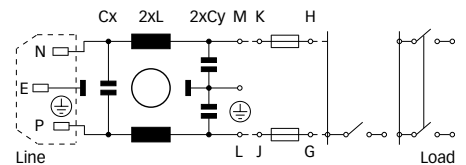


### Technical specifications

|  |  |
|--|--|
| Maximum continuous operating voltage:      | 250VAC, 50/60Hz  |
| Operating frequency:                       | 50 to 400Hz  |
| Rated currents:                            | 2 to 6A @ 40°C max.  |
| High potential test voltage:               | P → E 2000VAC for 2 sec (standard types)<br>P → E 2500VAC for 2 sec (B types)  |
|  | P → N 760VAC for 2 sec   |
| Protection category:                       | IP40 according to IEC 60529  |
| Temperature range (operation and storage): | -25°C to +85°C (25/85/21)  |
| Design corresponding to:                   | UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939   |
| Flammability corresponding to:             | UL 94V-2 or better   |
| MTBF @ 40°C/230V (Mil-HB-217F):            | 550,000 hours  |
| <b>Rocker switch description:</b>          |  |
| Function:                                  | 2-pole, dark not illuminated<br>Marking I - 0  |
| <b>Electrical specifications:</b>          |  |
|  | Inrush current 51A<br>6,000 on-off operations according to UL 1054, TV 5<br>10,000 on-off operations according to ENEC |
| <b>Mechanical life:</b>                    |  |
| Switch ratings:                            | 50,000 cycles  |
| <b>Switch ratings:</b>                     |  |
| USA (UL):                                  | 6A, 125VAC; 4A, 250VAC; 1/10HP   |
| Canada (CSA):                              | 6A, 125VAC; 4A, 250VAC; 1/10HP   |
| Europe (ENEC):                             | 6A (4A), 250VAC*   |

\* Value in () relates to the inductive current charge:  $\cos \gamma = 0.65$

### Typical electrical schematic



### Features and benefits


The FN 380 power entry module combines an IEC inlet, a mains filter with a single or dual-fuse holder and a 2-pole rocker switch. Choosing FN 380 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, fuse options, mounting possibilities and filters for medical applications are designed to offer you the desired solution.

- Good conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior.
- Rear/front or snap-in mounting.
- Single or dual-fuse holder.
- USA Ø6.3 x 32mm or EU Ø5 x 20mm fuses.
- 2-pole rocker switch.
- Voltage selector 110-120V / 220-240V.
- Custom-specific versions are available on request.

### Typical applications

- Portable electrical and electronic equipment
- Consumer goods
- EDP and office equipment
- Single-phase power supplies, switch-mode power supplies
- Test and measurement equipment
- Medical equipment

Filter selection table

| Filter*      | Rated current<br>@ 40°C (25°C) | Leakage current**<br>@ 230VAC/50Hz | Inductance<br>L | Capacitance |            | Resistance<br>R | Output<br>connections   | Fuses*** | Weight |
|--------------|--------------------------------|------------------------------------|-----------------|-------------|------------|-----------------|---|----------|--------|
|              | [A]                            | [µA]                               | [mH]            | Cx<br>[nF]  | Cy<br>[nF] | [kΩ]            |  | [Qty]    | [g]    |
| FN 380-2-2.  | 2 (2.4)                        | 373                                | 0.70            | 47          | 2.2        |                 | 13  | 1        | 55     |
| FN 380-4-2.  | 4 (4.8)                        | 373                                | 0.30            | 47          | 2.2        |                 | 13  | 1        | 55     |
| FN 380-6-2.  | 6 (7.2)                        | 373                                | 0.18            | 47          | 2.2        |                 | 13  | 1        | 55     |
| FN 382-2-2.  | 2 (2.4)                        | 373                                | 0.70            | 47          | 2.2        |                 | 13  | 2        | 55     |
| FN 382-4-2.  | 4 (4.8)                        | 373                                | 0.30            | 47          | 2.2        |                 | 13  | 2        | 55     |
| FN 382-6-2.  | 6 (7.2)                        | 373                                | 0.18            | 47          | 2.2        |                 | 13  | 2        | 55     |
| FN 385-2-2.  | 2 (2.4)                        | 373                                | 2.00            | 47          | 2.2        |                 | 13  | 2        | 65     |
| FN 385-4-2.  | 4 (4.8)                        | 373                                | 0.80            | 47          | 2.2        |                 | 13  | 2        | 65     |
| FN 385-6-2.  | 6 (7.2)                        | 373                                | 0.50            | 47          | 2.2        |                 | 13  | 2        | 65     |
| FN 388-2-2.  | 2 (2.4)                        | 373                                | 0.70            | 47          | 2.2        |                 | 13  | 2        | 60     |
| FN 388-4-2.  | 4 (4.8)                        | 373                                | 0.30            | 47          | 2.2        |                 | 13  | 2        | 60     |
| FN 388-6-2.  | 6 (7.2)                        | 373                                | 0.18            | 47          | 2.2        |                 | 13  | 2        | 60     |
| FN 389-2-2.  | 2 (2.4)                        | 373                                | 2.00            | 47          | 2.2        |                 | 13  | 2        | 70     |
| FN 389-4-2.  | 4 (4.8)                        | 373                                | 0.80            | 47          | 2.2        |                 | 13  | 2        | 70     |
| FN 389-6-2.  | 6 (7.2)                        | 373                                | 0.50            | 47          | 2.2        |                 | 13  | 2        | 70     |
| FN 382B-2-2. | 2 (2.4)                        | 2                                  | 0.70            | 47          |            | 1000            | 13  | 2        | 55     |
| FN 382B-4-2. | 4 (4.8)                        | 2                                  | 0.30            | 47          |            | 1000            | 13  | 2        | 55     |
| FN 382B-6-2. | 6 (7.2)                        | 2                                  | 0.18            | 47          |            | 1000            | 13  | 2        | 55     |
| FN 389B-2-2. | 2 (2.4)                        | 2                                  | 2.00            | 47          |            | 1000            | 13  | 2        | 70     |
| FN 389B-4-2. | 4 (4.8)                        | 2                                  | 0.80            | 47          |            | 1000            | 13  | 2        | 70     |
| FN 389B-6-2. | 6 (7.2)                        | 2                                  | 0.50            | 47          |            | 1000            | 13  | 2        | 70     |

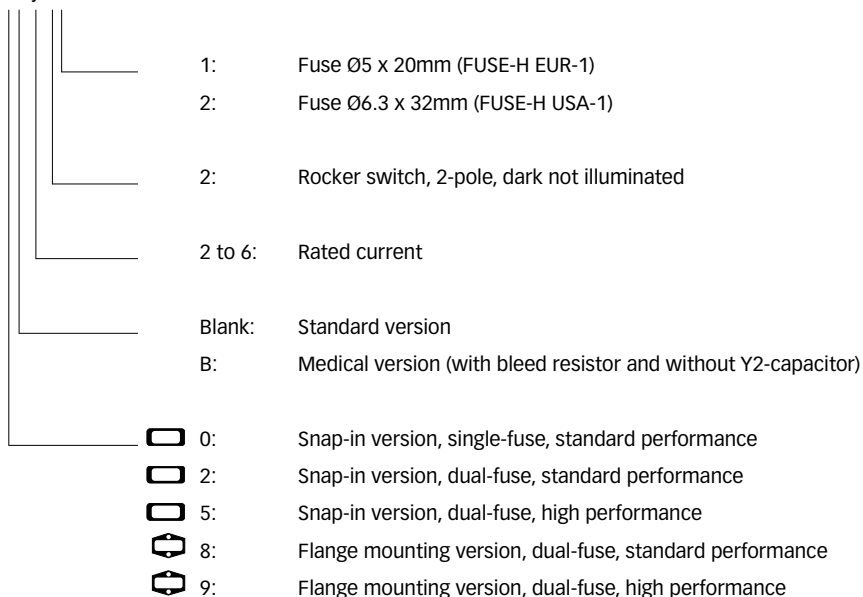
\* Select the requested fuse holder for fuse EUR-1 or USA-1.

\*\* Maximum leakage under normal operating conditions. Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

\*\*\* Filters are delivered without fuse.

Product selector

FN 38xx-y-zz

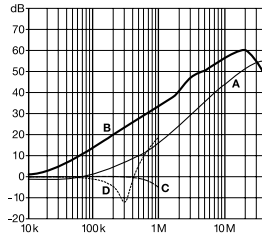


For example: FN 380-6-21, FN 388-4-22, FN 389B-2-21

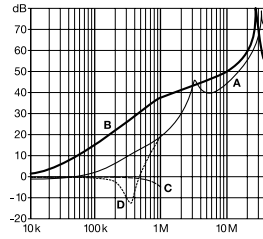
**Typical filter attenuation**

Per CISPR 17; A = 50Ω/50Ω sym; B = 50Ω/50Ω asym; C = 0.1Ω/100Ω sym; D = 100Ω/0.1Ω sym

FN 380 / FN 382 / FN 388

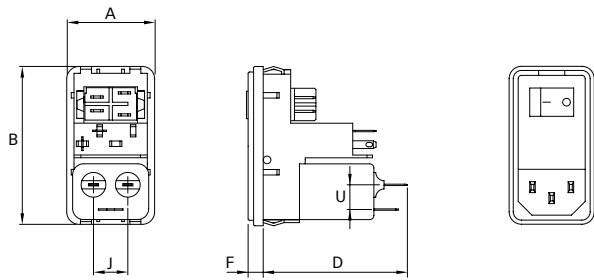


FN 385 / FN 389

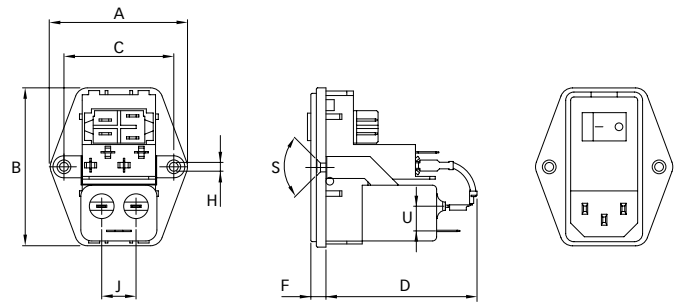


**Mechanical data**

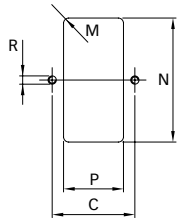
FN 380 / FN 382 / FN 385



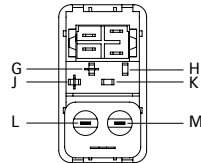
FN 388 / FN 389



**Panel cut out**



**Connection designation**



**Dimensions**

|   | FN 380       | FN 382       | FN 385       | FN 388       | FN 389       | Tolerances |
|---|--------------|--------------|--------------|--------------|--------------|------------|
| A | 32           | 32           | 32           | 50           | 50           | ±0.3       |
| B | 58           | 58           | 58           | 58           | 58           | ±0.3       |
| C |              |              |              | 40           | 40           | ±0.1       |
| D | 51           | 51           | 61           | 51           | 61           |            |
| F | 5.5          | 5.5          | 5.5          | 5.5          | 5.5          |            |
| H |              |              |              | Ø3.3         | Ø3.3         |            |
| J | 12.5         | 12.5         | 12.5         | 12.5         | 12.5         |            |
| M | R ≤ 2        | R ≤ 2        | R ≤ 2        | R ≤ 2        | R ≤ 2        | ±0.1       |
| N | 55.9*/56.2** | 55.9*/56.2** | 55.9*/56.2** | 55.9*/56.2** | 55.9*/56.2** | +0.2/-0    |
| P | 28.5         | 28.5         | 28.5         | 28.5         | 28.5         | +0.2/-0    |
| R |              |              |              | M3           | M3           |            |
| S |              |              |              | 90°          | 90°          |            |
| U | 9            | 9            | 9            | 9            | 9            |            |

\* For a back panel thickness between 0.8 and 2.0mm

\*\* For a back panel thickness between 2.1 and 3.2mm

All dimensions in mm; 1 inch = 25.4mm

Tolerances according: ISO 2768-m / EN 22768-m