

FN 2020

General-purpose filter

- current ratings from 1 to 60A
 - high differential mode attenuation
 - optional medical versions (B types)
 - optional safety versions (A types)
-
- Nennströme von 1 bis 60A
 - Hohe Dämpfung im symmetrischen Betrieb
 - Optionale medizinische Versionen (Typ B)
 - Optionale Sicherheitsversionen (Typ A)
-
- courants de service de 1 à 60 A
 - bonne atténuation en mode différentiel
 - en option version pour appareils médicaux (type B)
 - en option version pour la sécurité (type A)



Filter selection table

Choose the filter FN xxxx-x with the required current rating and features, and add /?? to determine input/output (line/load) connection style. Example: FN 2020-10/06 is a 10A filter with fast-on connections.

Approvals



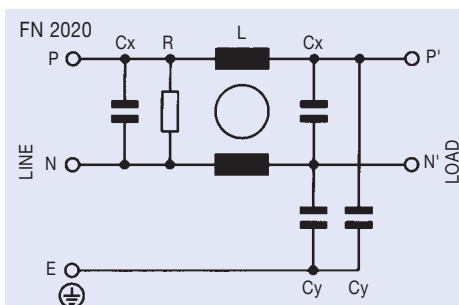
| Filter | Connections | | | Current ratings at 40°C (25°) A | Inductance L mH | Capacitance | | Resistance R MΩ | Housing | Weight g |
|----------------|-------------|------|-------|---------------------------------|-----------------|-------------|-------|-----------------|---------|----------|
| | Line | Load | Earth | | | Cx μF | Cy nF | | | |
| FN 2020-1 /?? | /06 | /07 | - | 1 (1.15) | 12 | 0.15 | 4.7 | 1 | F2 | 80 |
| FN 2020-3 /?? | /06 | /07 | - | 3 (3.45) | 2.5 | 0.15 | 4.7 | 1 | F2 | 80 |
| FN 2020-6 /?? | /06 | /07 | - | 6 (6.9) | 1 | 0.15 | 4.7 | 1 | F2 | 80 |
| FN 2020-10 /?? | /06 | /07 | - | 10 (11.5) | 0.8 | 0.15 | 4.7 | 1 | F2 | 85 |
| FN 2020-12 /?? | /06 | /07 | - | 12 (13.8) | 0.7 | 0.15 | 4.7 | 1 | F2 | 85 |
| FN 2020-16 /?? | /06 | /07 | - | 16 (18.4) | 0.65 | 0.15 | 4.7 | 1 | H2 | 140 |
| FN 2020-20 /?? | /06 | - | /08 | 20 (23) | 0.6 | 0.15 | 4.7 | 1 | K1 | 210 |
| FN 2020-30 /?? | - | - | /08 | 30 (34.5) | 0.67 | 0.47 | 10 | 0.47 | P | 470 |
| FN 2020-60 /?? | - | - | /24 | 60 (69) | 1 | 1.5 | 10 | 0.22 | L2 | 1100 |

Additional specifications

| Filter type | Maximum operating voltage | | Operating frequency Hz | Hipot test voltage | | MTBF Per Mil-HB-217F at 40°C 230V hours | Maximum leakage mA/phase |
|------------------------------------|---------------------------|-------|------------------------|--------------------|---------|---|--------------------------|
| | VAC | Hz | | PN→E VAC | P→N VDC | | |
| Standard types | 250 | 50/60 | DC to 400 | 2000 | 1700 | 600 000 | 0.4* |
| B medical types (no Y capacitors) | 250 | 50/60 | DC to 400 | 2500 | 1700 | 600 000 | 0.002 |
| A safety types (lower capacitance) | 250 | 50/60 | DC to 400 | 2500 | 1700 | 600 000 | 0.040 |

* 1mA for 30A and 60A versions

Electrical schematic

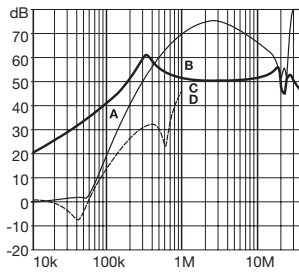


See tables for component values.

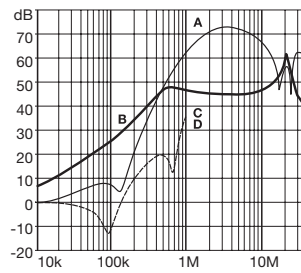
FN 2020 insertion loss

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

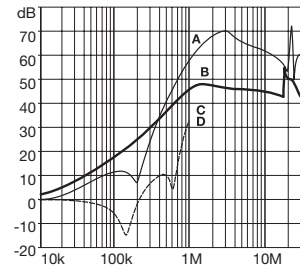
1A types



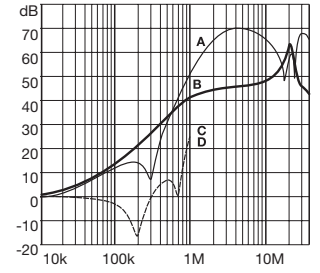
3A types



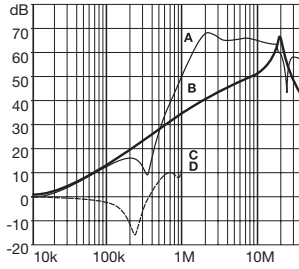
6A types



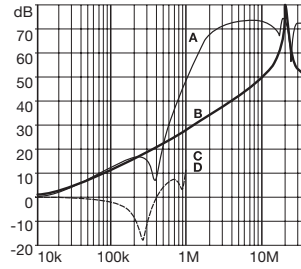
10A types (12A*)



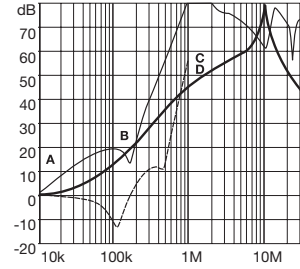
16A types



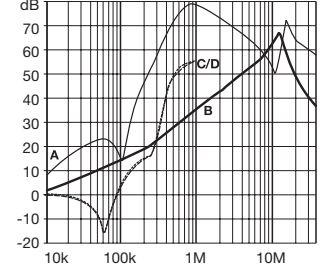
20A types



30A types



60A types



* attenuation performance of the 12A version is similar to the 10A component.

Mechanical data

| Housing style | F2 | H2 | K1 | Tol.* ± mm |
|---------------|-----------------------|------------------------|---|------------|
| A | 64 ± 0.3 | 71 | 85 | ± 0.5 |
| B | 35 | 46.6 | 54 | ± 0.5 |
| C | 29.3 | | 30.3 | ± 0.5 |
| D | 43.5 | 50.5 | 64.8 | ± 0.5 |
| F | 54 | 61 | 75 | ± 0.3 |
| J | 21 | | 27 | ± 0.2 |
| K | 8.3 [§] /9.3 | 10.8/8.3 [§] | 12.3/8.3 [§] | ± 0.5 |
| L | 15.3 | 19.3 | 20.8/23.3 | ± 0.5 |
| M | 5.3 | | | ± 0.1 |
| N | 6.3 | | | ± 0.1 |
| P | 0.7 | | | ± 0.1 |
| S | | 20.1/30.5 [§] | 19.9/34.9 [§] /21.4 [†] | ± 0.5 |

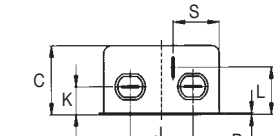
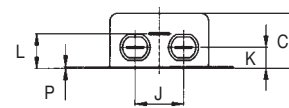
§ with /07 connections
 † with /08 connections
 wire length of /07: 140 +5 mm

* Measurements share this common tolerance unless otherwise stated.

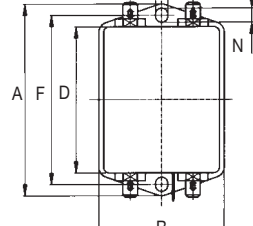
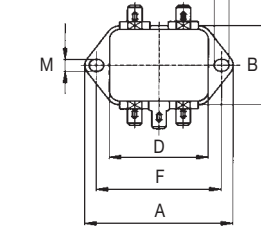
| Housing style | P | L2 | Tol.* ± mm |
|---------------|------------|-----------|------------|
| A | 113.5 | 105 ± 0.5 | ± 1 |
| B | 57.5 | 99.5 | ± 1 |
| C | 45.4 ± 1.2 | 57.6 | ± 1 |
| D | 94 | 84.5 | ± 1 |
| F | 103 | 95 | ± 0.3 |
| J | 25 | 40 | ± 0.2 |
| K | 12.4 | 10.1 | ± 0.5 |
| L | 32.4 | 20 | ± 0.5 |
| M | 4.4 | | ± 0.1 |
| N | 6 | | ± 0.1 |
| P | 0.9 | 79 | ± 0.1 |
| R | | 51 | ± 0.2 |
| S | 15.5 | | ± 0.5 |

* Measurements share this common tolerance unless otherwise stated.

FRONT



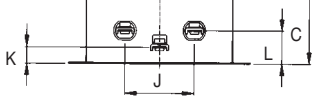
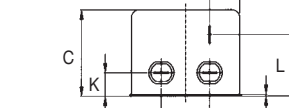
TOP



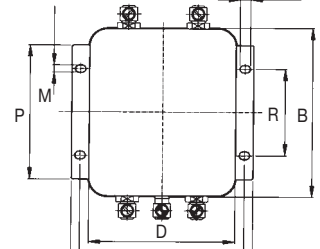
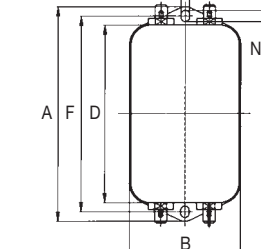
Housing F2

Housings H2, K1

FRONT



TOP



Housing P

Housing L2

All dimensions in mm; 1 inch = 25.4 mm