

# Two-stage general-purpose filter

# FN 660

- Current ratings from 1 to 20A
- High differential and common mode attenuation
- Four choices of output connector
- Optional medical versions (B type)
- Nennströme von 1 bis 20A
- Gute differentielle und Gleichtakt-Dämpfung
- Vier Anschlußarten
- Für medizinische Geräte als Option (Typ B)
- Courants de service de 1 à 20A
- Bonne atténuation en modes différentiel et commun
- Quatre types de connexions de sortie
- Version pour appareils médicaux en option (type B)



### Filter selection table

Choose the family FN xxx with the required current rating and features, and add /?? to determine input/output (line/load) connection style. Example: FN 660-3/07 is a 3A filter with wire connections.

### Approvals



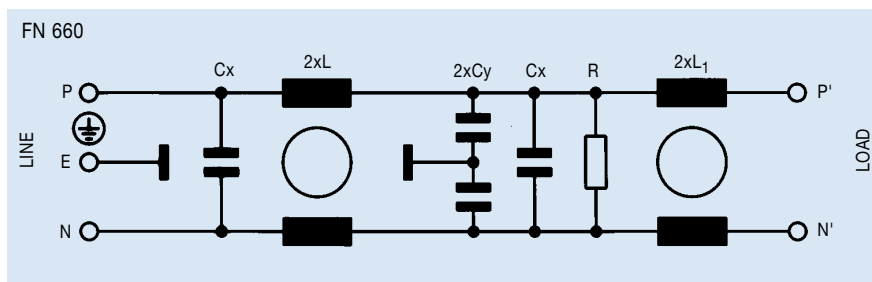
| Family         | Connections |     |     |     | Current ratings at 40°C (25°) A | Inductance L/L1 mH | Housing | Weight g |     |     |     |
|----------------|-------------|-----|-----|-----|---------------------------------|--------------------|---------|----------|-----|-----|-----|
|                |             |     |     |     |                                 |                    |         | /03      | /06 | /07 | /10 |
| FN 660 -1 /??  |             | /06 | /07 |     | 1 (1.15)                        | 3/3                | H21     | 115      | 125 |     |     |
| FN 660 -3 /??  |             | /06 | /07 |     | 3 (3.4)                         | 2/2                | K1      | 170      | 180 |     |     |
| FN 660 -6 /??  |             | /06 | /07 |     | 6 (6.9)                         | 0.75/0.75          | K1      | 170      | 180 |     |     |
| FN 660 -10 /?? |             | /06 | /07 |     | 10 (11.5)                       | 0.45/0.45          | K21     | 230      | 240 |     |     |
| FN 660 -16 /?? | /03         | /06 |     | /10 | 16 (18.4)                       | 0.44/0.44          | K2      | 290      | 260 |     | 290 |
| FN 660 -20 /?? | /03         | /06 |     | /10 | 20 (23)                         | 0.48/0.48          | L1      | 600      | 590 |     | 640 |

### Additional specifications

| Filter type       | Capacitance |       | Res. R MΩ | Maximum leakage μA/phase | Maximum operating voltage |       | Operating frequency Hz | Hipot test voltage |         |
|-------------------|-------------|-------|-----------|--------------------------|---------------------------|-------|------------------------|--------------------|---------|
|                   | Cx nF       | Cy nF |           |                          | VAC                       | Hz    |                        | PN→E VAC           | P→N VAC |
| Standard types    | 150         | 2.2   | 1         | 190                      | 250                       | 50/60 | DC to 400              | 2000               | 1700    |
| B types (medical) | 150         |       | 1         | 2                        | 250                       | 50/60 | DC to 400              | 2500               | 1700    |

MTBF at 40°C, 230V, per Mil-HB-217F: 350,000 hours (for VDE-approved current ratings).

### Electrical schematic

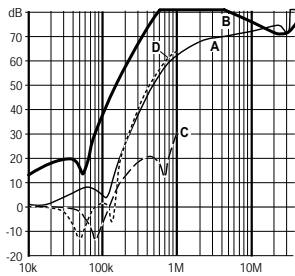


See tables for component values.

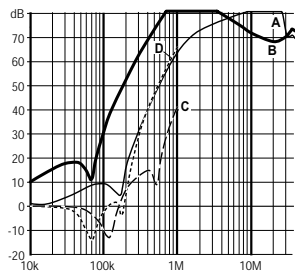
## FN 660 insertion loss

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

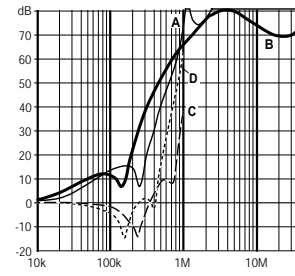
### 1 amp types



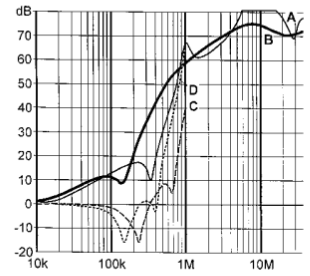
### 3 amp types



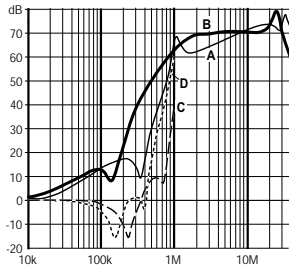
### 6 amp types



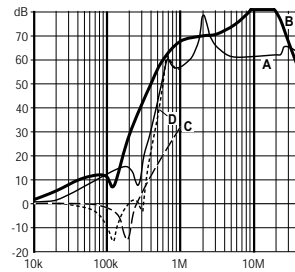
### 10 amp types



### 16 amp types



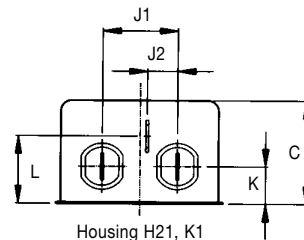
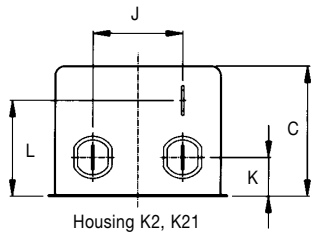
### 20 amp types



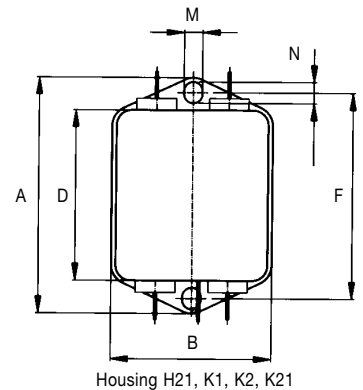
## Mechanical data

|   | FN 660-1<br>H21                        | Tol.<br>mm |
|---|--|------------|
| A | 71                                     | ± 0.5      |
| B | 46.6                                   | ± 1        |
| C | 29                                     | ± 1        |
| D | 50.5                                   | ± 1        |
| F | 61                                     | ± 0.2      |
| J | 21 <sup>(J1)</sup> 8.5 <sup>(J2)</sup> | ± 0.5      |
| K | 10.5                                   | ± 0.3      |
| L | 19                                     | ± 0.5      |
| M | 5.3                                    | ± 0.1      |
| N | 6.3                                    | ± 0.1      |
| Y | 6                                      | ± 1        |
| Z | 140                                    | + 5        |

### Front view

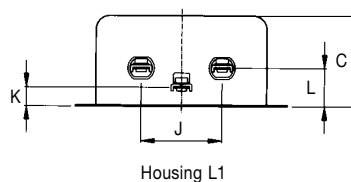


### Top view

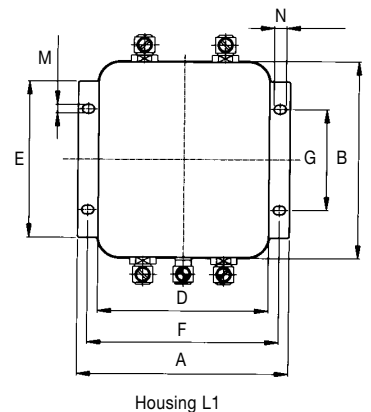


|   | FN 660<br>-3-6<br>K1                   | FN 660<br>-10/-16<br>K2, K21 | FN 660<br>-20<br>L1 | Tol.*<br>mm |
|---|--|------------------------------|---------------------|-------------|
| A |  | 85                           | 105                 | ± 0.5       |
| B |  | 54                           | 99.5 ± 1            | ± 0.5       |
| C | 30                                     | 40                           | 38                  | ± 1         |
| D |  | 65                           | 84.5                | ± 1         |
| E |  |                              | 79                  | ± 0.5       |
| F |  | 75                           | 95                  | ± 0.2       |
| G |  |                              | 51                  | ± 0.1       |
| J | 27 <sup>(J1)</sup> 8.5 <sup>(J2)</sup> | 27                           | 40                  | ± 0.5       |
| K | 7                                      | 12                           | 9.5                 | ± 0.5       |
| L |  | 29.5                         | 19                  | ± 0.5       |
| M |  | 5.3                          | 4.4                 | ± 0.1       |
| N |  | 6.3                          | 6                   | ± 0.1       |
| W | AWG 16                                 |                              |                     | -           |
| Y |  | 6                            |                     | ± 1         |
| Z | 300                                    | 140 + 5                      |                     | + 10        |

### Front view



### Top view



\* Measurements share this common tolerance unless otherwise stated.

All dimensions in mm; 1 inch = 25.4 mm

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