

# Three Phase Filters

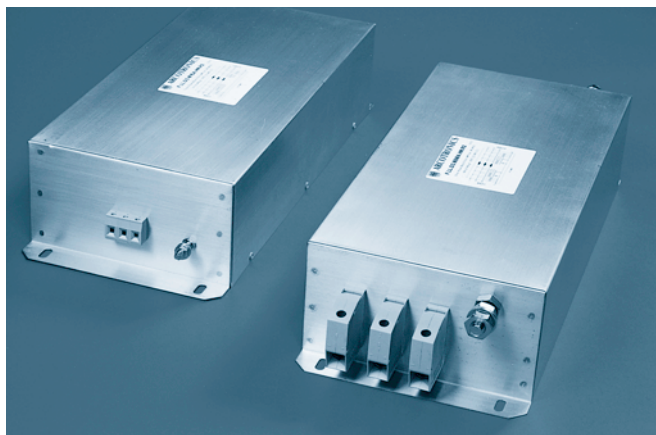
Industrial environments

F.LL.D3 series – HN.R2 type

## High performance, high voltage, general applications

Offered as an extension to the standard AN/HN.\*1 series, these products are rated at 600Vac, whilst still maintaining performance characteristics required for industrial frequency inverter and motor drive applications.

- Current ratings from 8A to 450A
- High voltage design - 600Vac
- High attenuation performance
- Safety terminal blocks for easy installation
- 3 phase + neutral designs available



## Mechanical specifications

Manufacture: metal enclosure, electrical components sealed with self-extinguishing resin.

Connections: Phases: terminal blocks – all current ratings.

Earth: threaded with nuts plus washer:

8A to 50A = M6; 80A to 280A = M10; 450A = M16

## Electrical specifications

Rated voltage ( $V_R$ ): 600Vac, 50/60Hz at 40°C

Rated current ( $I_R$ ): referred to room temperature = 40°C

Leakage current (l): at 440V /  $\sqrt{3}$ , 50Hz, max value

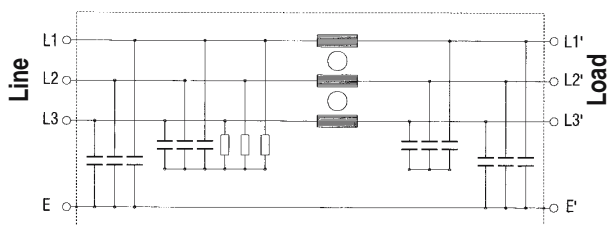
Voltage test ( $2s$ ): line to ground 3470Vdc

line to line 1700Vdc

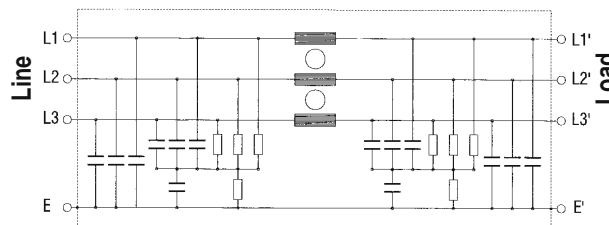
Climatic category: HPF (25/085/21);

temperature range: -25°C to +85°C

Circuit diagram A



Circuit diagram B



## Filter range

| Code                | $I_R$<br>(A) | $\Delta I_L$<br>(mA) | $C_x$<br>( $\mu F$ ) | $C_y$<br>(nF)               | L<br>(mH) | R<br>(M $\Omega$ ) | $L_R$<br>(m $\Omega$ ) | Circ<br>diag |
|---------------------|--------------|----------------------|----------------------|-----------------------------|-----------|--------------------|------------------------|--------------|
| F.LL.D3.008A.HN.R2  | 8            | 24                   | 3x2.2 + 3x1.0        | 3x10 + 3x47                 | 3x7.6     | 3 x 1              | < 38                   | A            |
| F.LL.D3.016A.HN.R2  | 16           | 24                   | 3x4.4 + 3x2.2        | 3x10 + 3x47                 | 3x5.2     | 3 x 1              | < 10                   | A            |
| F.LL.D3.025A.HN.R2  | 25           | 275                  | 3x4.4 + 3x4.4        | 3x10 + 2x1 $\mu F$ + 3x94   | 3x2.2     | 6 x 1.5 + 2 x 0.68 | < 4.3                  | B            |
| F.LL.D3.036A.HN.R2  | 36           | 275                  | 3x4.4 + 3x4.4        | 3x10 + 2x1 $\mu F$ + 3x94   | 3x1.3     | 6 x 1.5 + 2 x 0.68 | < 2.4                  | B            |
| F.LL.D3.050A.HN.R2  | 50           | 275                  | 3x4.4 + 3x4.4        | 3x10 + 2x1 $\mu F$ + 3x94   | 3x0.8     | 6 x 1.5 + 2 x 0.68 | < 1.5                  | B            |
| F.LL.D3.080A.HN.R2  | 80           | 315                  | 3x6.7 + 3x6.7        | 3x94 + 2x1 $\mu F$ + 3x94   | 3x0.9     | 6 x 1.5 + 2 x 0.68 | < 1.2                  | B            |
| F.LL.D3.110A.HN.R2  | 110          | 315                  | 3x6.7 + 3x6.7        | 3x94 + 2x1 $\mu F$ + 3x94   | 3x0.5     | 6 x 1.5 + 2 x 0.68 | < 0.7                  | B            |
| F.LL.D3.180A.HN.R2  | 180          | 335                  | 3x5 + 3x5            | 3x94 + 2x1 $\mu F$ + 3x94   | 3x0.5     | 6 x 1.5 + 2 x 0.68 | < 0.5                  | B            |
| F.LL.D3.280A.HN.R2  | 280          | 470                  | 3x10 + 3x10          | 3x282 + 2x1 $\mu F$ + 3x282 | 3x0.31    | 6 x 1.5 + 2 x 0.68 | < 0.3                  | B            |
| F.LL.D3.450A.HN.R2* | 450          | 470                  | 3x10 + 3x10          | 3x282 + 2x1 $\mu F$ + 3x282 | 3x0.075   | 6 x 1.5 + 2 x 0.68 | < 0.25                 | B            |

$\Delta$  = See leakage current note on page two

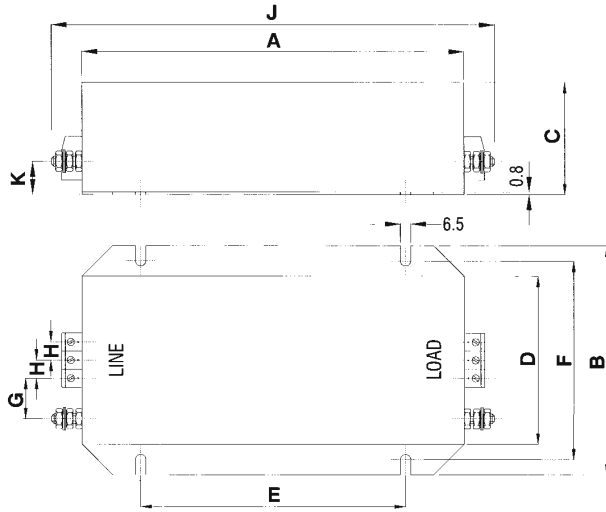
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Industrial environments

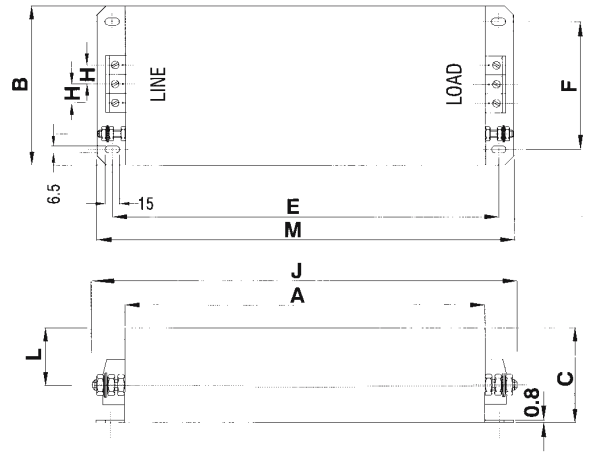
F.LL.D3 series – HN.R2 type

## Dimensions (mm) and connections

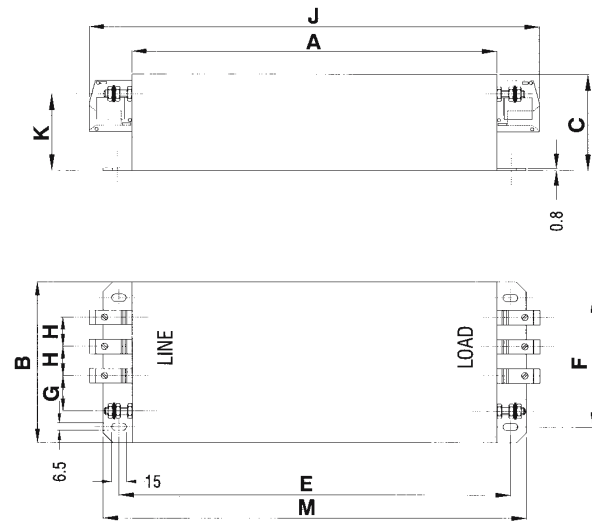
Case R ...F.LL.D3...008A...



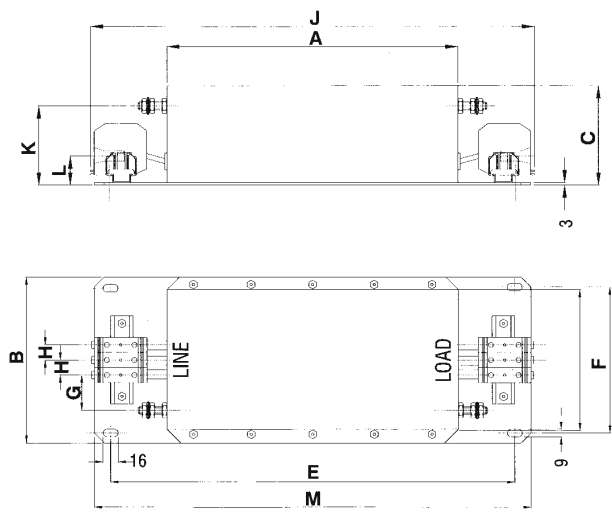
Case S ...F.LL.D3...016A...



Case T ...F.LL.D3...025 – 110A...



Case U ...F.LL.D3...180 – 450A...



## Dimensions

| Code               | A   | B   | C   | D   | E   | F   | G  | H  | J   | K   | L  | M   | Case | Terminal Size      |
|--------------------|-----|-----|-----|-----|-----|-----|----|----|-----|-----|----|-----|------|--------------------|
| F.LL.D3.008A.HN.R2 | 200 | 150 | 65  | 120 | 115 | 135 | 31 | 10 | 230 | 17  | -  | -   | R    | 4mm <sup>2</sup>   |
| F.LL.D3.016A.HN.R2 | 350 | 170 | 90  | -   | 375 | 130 | -  | 10 | 380 | -   | 60 | 400 | S    | 4mm <sup>2</sup>   |
| F.LL.D3.025A.HN.R2 | 350 | 170 | 90  | -   | 375 | 130 | 35 | 30 | 400 | 70  | -  | 400 | T    | 10mm <sup>2</sup>  |
| F.LL.D3.036A.HN.R2 | 350 | 170 | 90  | -   | 375 | 130 | 35 | 30 | 400 | 70  | -  | 400 | T    | 10mm <sup>2</sup>  |
| F.LL.D3.050A.HN.R2 | 350 | 170 | 90  | -   | 375 | 130 | 35 | 30 | 400 | 70  | -  | 400 | T    | 10mm <sup>2</sup>  |
| F.LL.D3.080A.HN.R2 | 350 | 170 | 90  | -   | 375 | 130 | 35 | 30 | 427 | 70  | -  | 400 | T    | 25mm <sup>2</sup>  |
| F.LL.D3.110A.HN.R2 | 350 | 170 | 90  | -   | 375 | 130 | 36 | 32 | 436 | 70  | -  | 400 | T    | 50mm <sup>2</sup>  |
| F.LL.D3.180A.HN.R2 | 300 | 180 | 128 | -   | 470 | 156 | 50 | 25 | 537 | 88  | 38 | 510 | U    | 95mm <sup>2</sup>  |
| F.LL.D3.280A.HN.R2 | 450 | 260 | 153 | -   | 660 | 220 | 64 | 31 | 702 | 103 | 47 | 700 | U    | 150mm <sup>2</sup> |
| F.LL.D3.450A.HN.R2 | 450 | 260 | 153 | -   | 660 | 220 | 64 | 31 | 702 | 103 | 47 | 700 | U    | 240mm <sup>2</sup> |

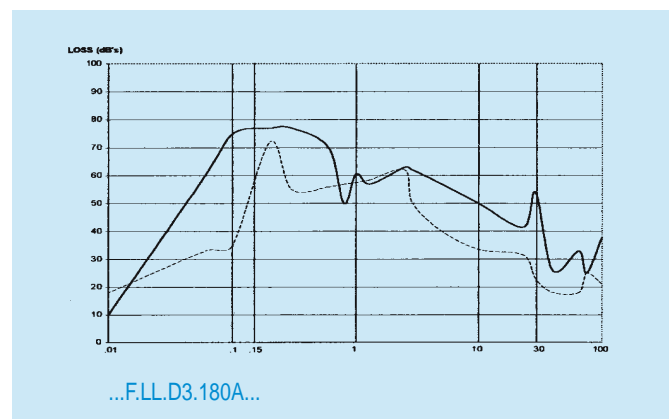
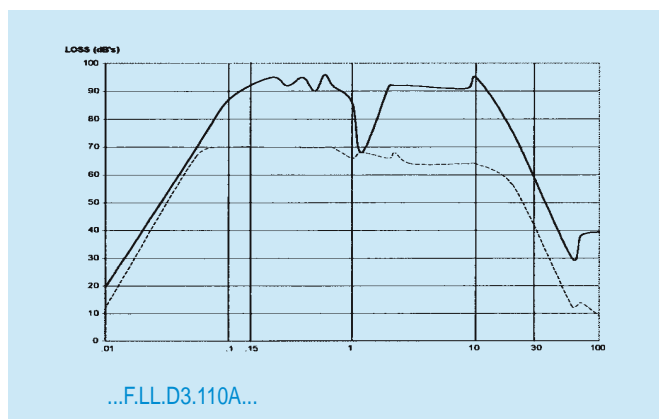
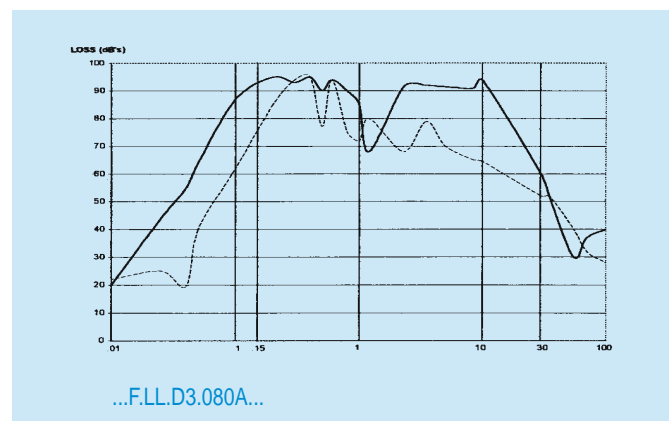
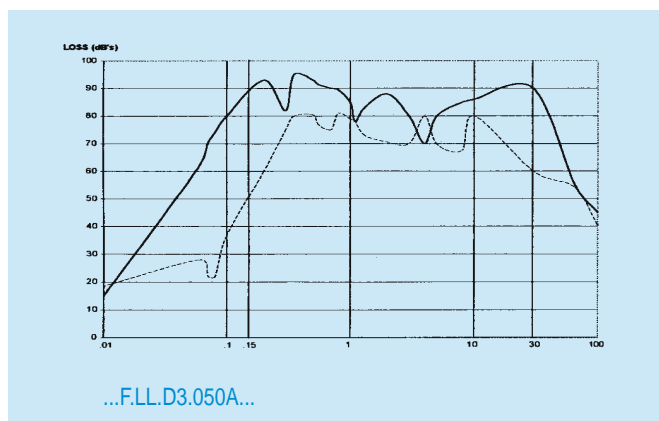
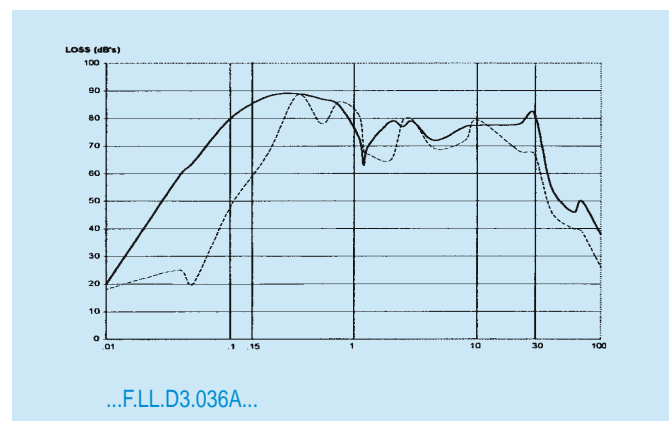
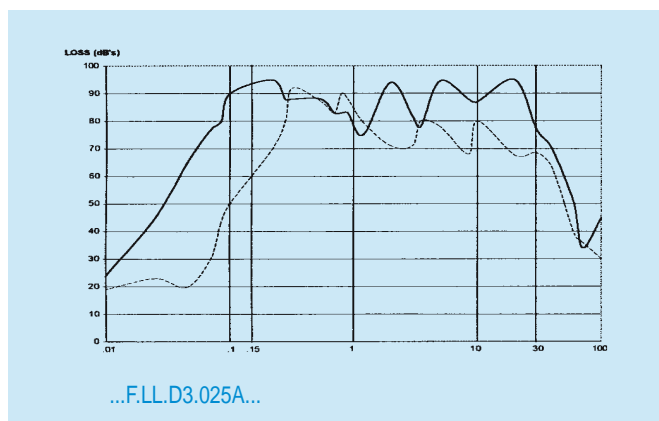
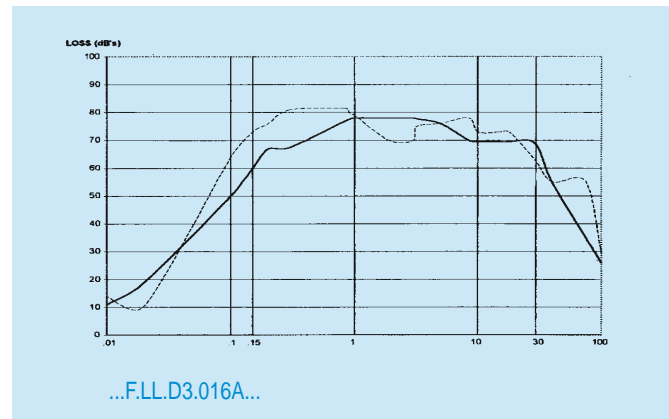
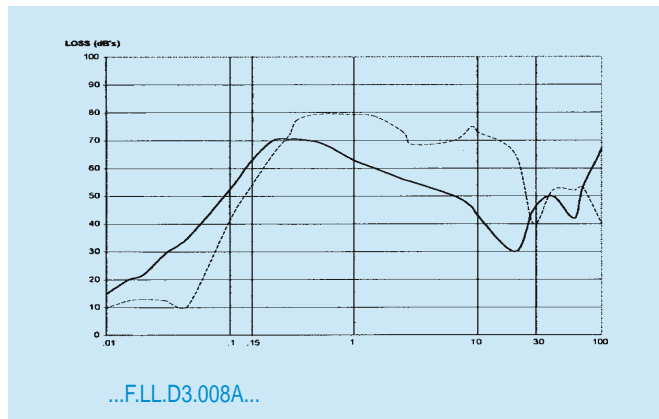
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## Insertion loss (Typical)

--- Symmetrical (line to line) — Asymmetrical (line to ground)



Note: 280A and 450A performance data available on request