

Three Phase Filters

Industrial environments

F.L.L.D3 series – AN/HN type

High performance, high voltage, general applications

Three phase filter range with high attenuation characteristics, especially designed for industrial based frequency inverters and motor drives. Available in 440Vac and 520Vac models, with a choice of terminal blocks on all models or threaded terminals up to 110 Amp, provides flexibility on a range of products that have now become an industry standard.

- Current ratings from 8A to 450A
- High attenuation performance
- Choice of voltage ratings for worldwide applications
- Safety block or threaded terminations
- Low earth leakage versions
- 3 phase + neutral designs available

Mechanical specifications

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

Connections: Phases: (I) threaded with nuts plus washer: 8A to 110A inclusive.

(R) 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): 'AN': 440Vac, 50/60Hz at 40°C

'HN': 520Vac, 50/60Hz at 40°C

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

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

Voltage test (2_s): lines to ground 'AN' - 3200Vdc

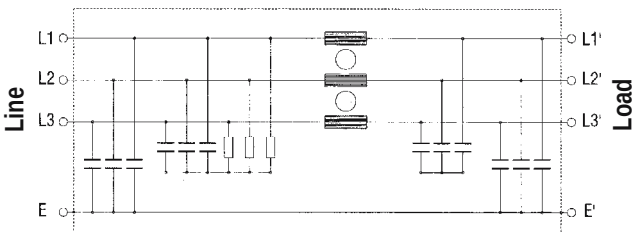
'HN' - 3470Vdc

line to line 1700Vdc

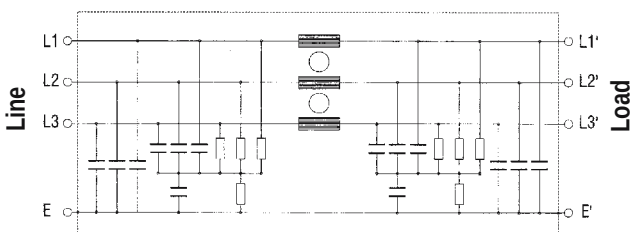
Climatic category: HPF (25/085/21);

temperature range: -25°C to +85°C

Circuit diagram A



Circuit diagram B



Filter range

Code	I_R (A)	ΔI_L (mA)	Cx (μF)	Cy (nF)	L (mH)	R (m Ω)	L_R (m Ω)	Circ diag
F.L.L.D3.008A. – N.–1	8	18	3x2.2 + 3x1	3x10 + 3x47	3x7.6	3 x 1	< 38	A
F.L.L.D3.016A. – N.–1	16	18	3x4.4 + 3x2.2	3x10 + 3x47	3x5.2	3 x 1	< 10	A
F.L.L.D3.025A. – N.–1	25	205	3x4.4 + 3x4.4	3x10 + 2x1 μF + 3x94	3x2.2	6 x 1.5 + 2 x 0.68	< 4.3	B
F.L.L.D3.036A. – N.–1	36	205	3x4.4 + 3x4.4	3x10 + 2x1 μF + 3x94	3x1.3	6 x 1.5 + 2 x 0.68	< 2.4	B
F.L.L.D3.050A. – N.–1	50	205	3x4.4 + 3x4.4	3x10 + 2x1 μF + 3x94	3x0.8	6 x 1.5 + 2 x 0.68	< 1.5	B
F.L.L.D3.080A. – N.–1	80	235	3x6.7 + 3x6.7	3x94 + 2x1 μF + 3x94	3x0.9	6 x 1.5 + 2 x 0.68	< 1.2	B
F.L.L.D3.110A. – N.–1	110	235	3x6.7 + 3x6.7	3x94 + 2x1 μF + 3x94	3x0.5	6 x 1.5 + 2 x 0.68	< 0.7	B
F.L.L.D3.180A. – N.–1	180	235	3x5 + 3x5	3x94 + 2x1 μF + 3x94	3x0.52	6 x 1.5 + 2 x 0.68	< 0.5	B
F.L.L.D3.280A. – N.–1	280	370	3x10 + 3x10	3x282 + 2x1 μF + 3x282	3x0.31	6 x 1.5 + 2 x 0.68	< 0.3	B
F.L.L.D3.450A. – N.–1*	450	370	3x10 + 3x10	3x282 + 2x1 μF + 3x282	3x0.075	6 x 1.5 + 2 x 0.68	< 0.25	B

6 = Low earth leakage design available, details on request

I = Threaded terminals $\leq$ 110A

R = Terminal blocks - all ratings

A = 440Vac
H = 520Vac

Δ = See leakage current note on page two

Approvals



Except model marked*

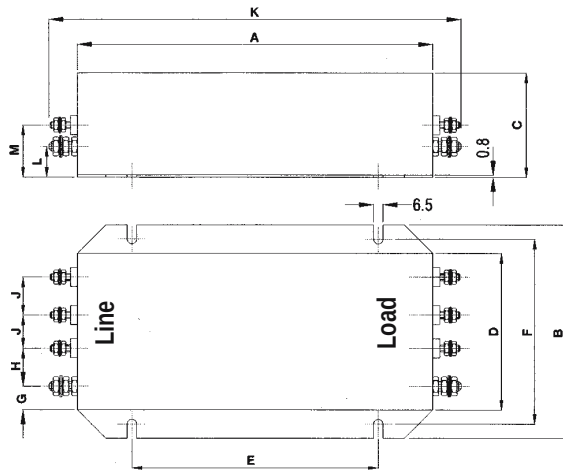
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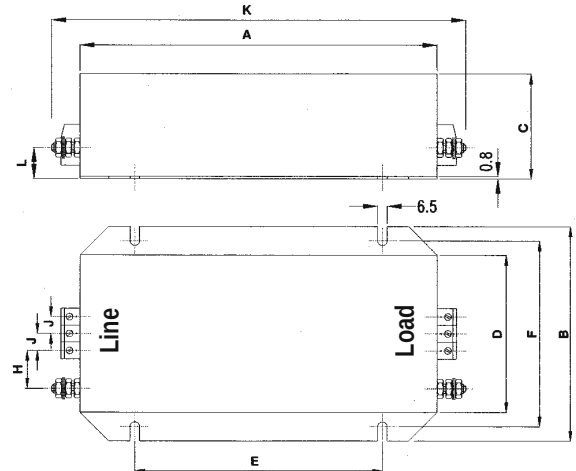
F.LL.D3 series – **AN/HN** type

Dimensions (mm) and connections

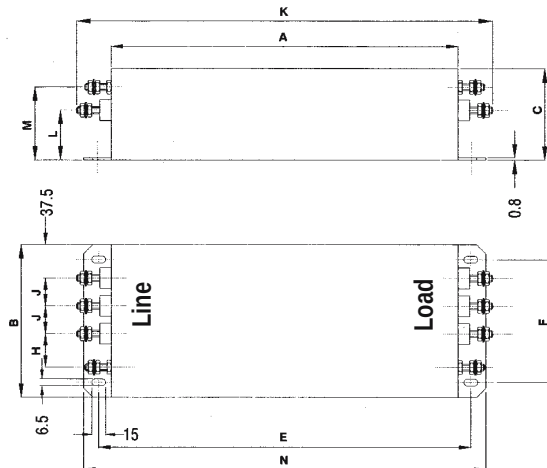
Case R ...F.LL.D3...8A - 50A 'I1' variants



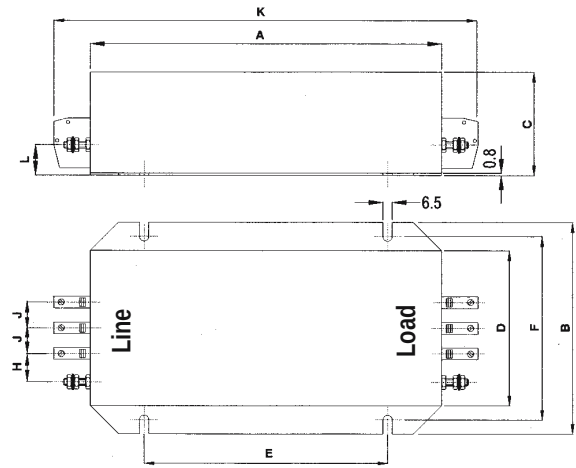
Case S ...F.LL.D3...8A - 16A 'R1' variants



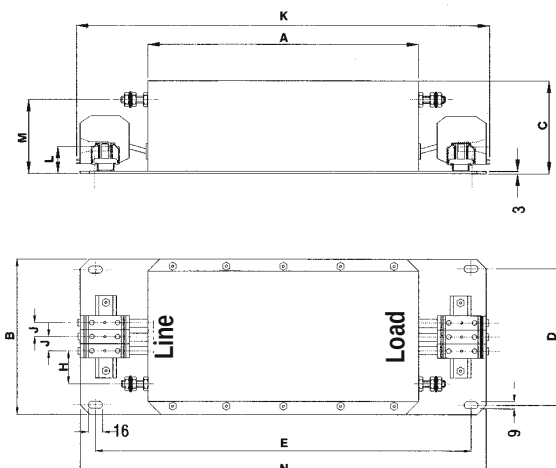
Case T ...F.LL.D3...80A - 110A 'I1' variants



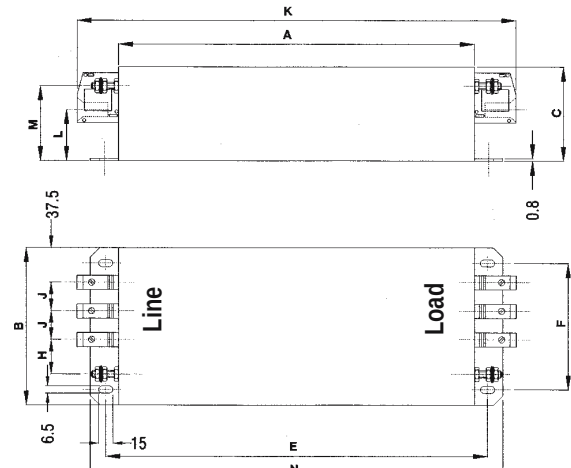
Case U ...F.LL.D3...25A - 50A 'R1' variants



Case V ...F.LL.D3...180A - 450A 'R1' variants



Case W ...F.LL.D3...80A - 110A 'R1' variants



Dimensions

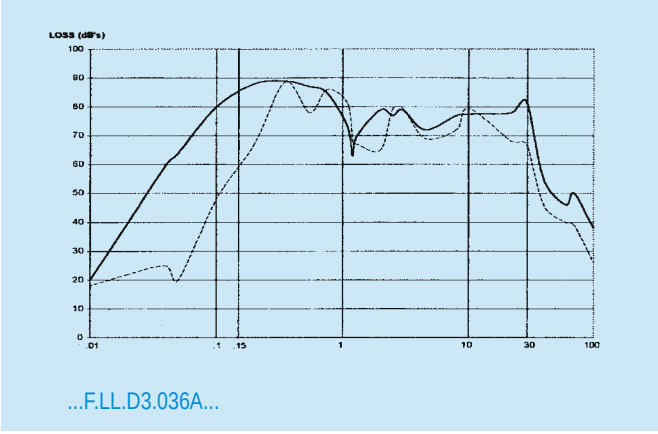
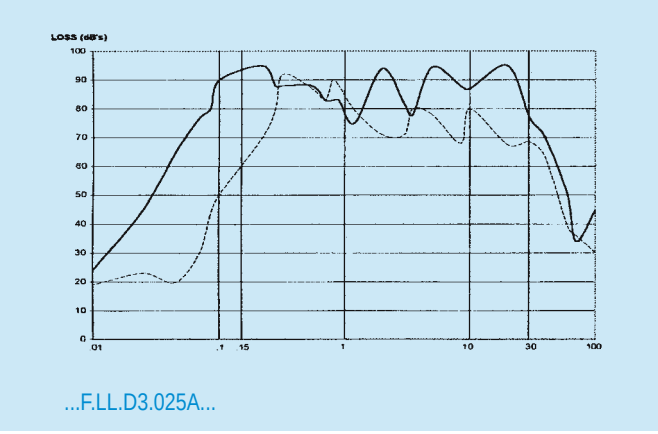
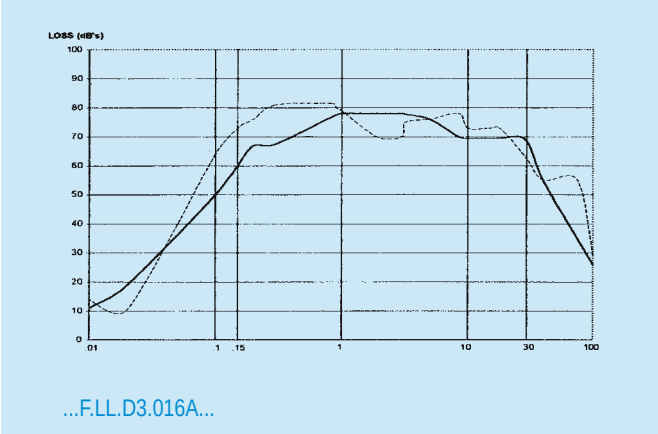
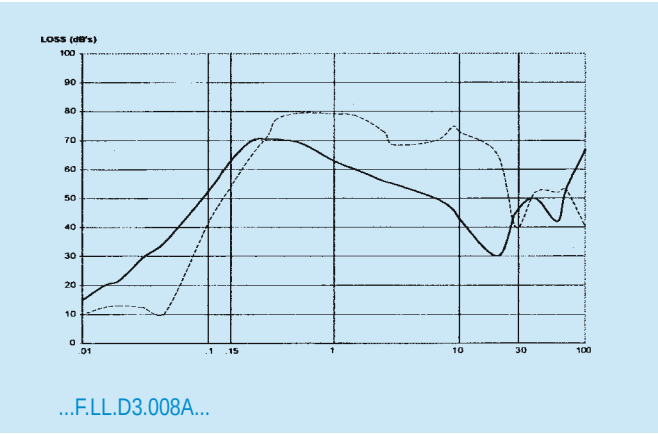
Code	A	B	C	D	E	F	G	H	J	K	L	M	N	Case	Terminal Size
F.LL.D3.008A – N.I1	180	115	60	85	115	100	20	15	15	210	17	30	-	R	M4
F.LL.D3.008A – N.R1	180	115	60	85	115	100	20	19.5	10	210	17	-	-	S	4mm ²
F.LL.D3.016A – N.I1	200	150	65	120	115	135	15	30	30	230	17	30	-	R	M4
F.LL.D3.016A – N.R1	200	150	65	120	115	135	15	31	10	230	17	-	-	S	4mm ²
F.LL.D3.025A – N.I1	200	150	65	120	115	135	15	30	30	250	17	30	-	R	M6
F.LL.D3.025A – N.R1	200	150	65	120	115	135	15	21	20	250	17	-	-	U	10mm ²
F.LL.D3.036A – N.I1	200	150	65	120	115	135	15	30	30	250	17	30	-	R	M6
F.LL.D3.036A – N.R1	200	150	65	120	115	135	15	21	20	250	17	-	-	U	10mm ²
F.LL.D3.050A – N.I1	200	150	65	120	115	135	15	30	30	250	17	30	-	R	M6
F.LL.D3.050A – N.R1	200	150	65	120	115	135	15	21	20	250	17	-	-	U	10mm ²
F.LL.D3.080A – N.I1	350	170	90	170	375	130	37	35	30	420	46	70	400	T	M10
F.LL.D3.080A – N.R1	350	170	90	170	375	130	37	35	30	427	46	70	400	W	25mm ²
F.LL.D3.110A – N.I1	350	170	90	170	375	130	35	36	32	420	44	70	400	T	M10
F.LL.D3.110A – N.R1	350	170	90	170	375	130	35	36	32	436	44	70	400	T	50mm ²
F.LL.D3.180A – N.R1	300	180	128	140	470	156	15	28	25	537	38	88	510	V	95mm ²
F.LL.D3.280A – N.R1	450	260	153	220	660	220	51	28	31	742	47	103	700	V	150mm ²
F.LL.D3.450A – N.R1	450	260	153	220	660	220	51	28	31	742	47	103	700	V	240mm ²

I = Threaded terminals ≤ 110A
R = Terminal blocks - all ratings

A = 440Vac
H = 520Vac

Insertion loss (Typical)

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



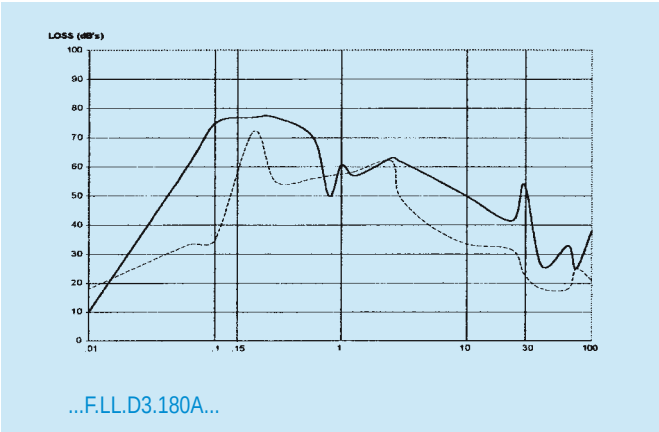
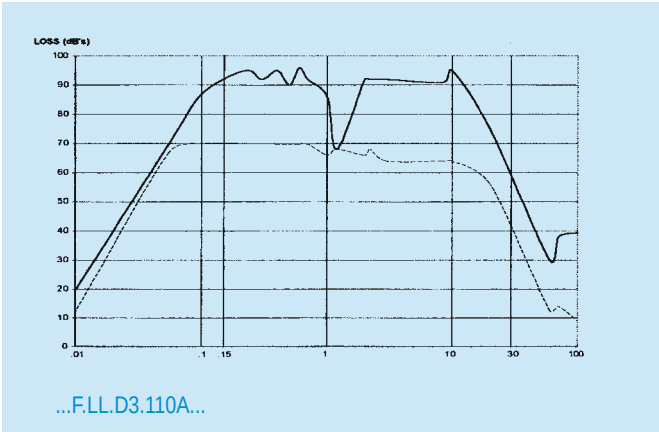
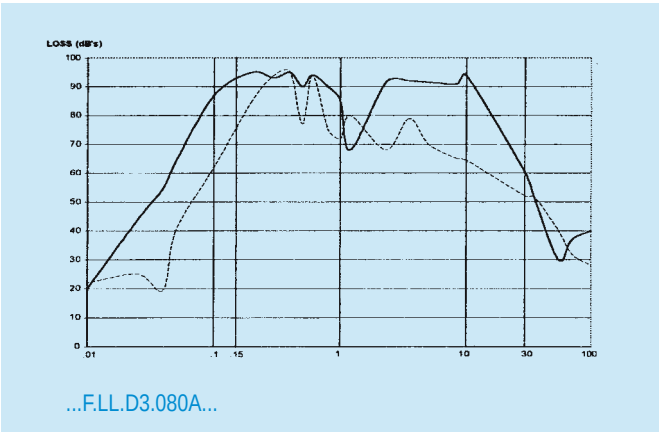
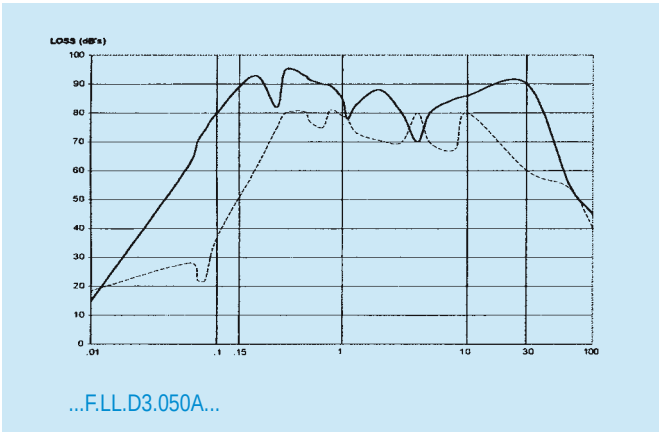
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Note: 280A and 450A performance data available on request