

High Current Line Filters for 3-phase systems



FMAC Series, all-purpose filters to Protection Class I, conform to EN 133200, UL 1283 and IEC 60950

Nominal current: 6 - 1100 A @ ϑ_a 40°C
Rated voltage U_R (U_{max}): 480 and 520 VAC 50/60 Hz
Attenuation: High
Leakage current: for Industrial applications
Test voltages for 480 V: L → E 3 kVDC, 2 sec *
 L → L 2.25 kVDC, 2 sec *
Test voltages for 520 V: L → E 4 kVDC, 2 sec *
 L → L 2.25 kVDC, 2 sec *
Climatic category: 25/100/21 acc. to IEC 60068-1
50% saturation typ.: 2 to 3 x I_N @ 20°C
Inrush current: 1.5 x I_N 1 min. per hour
MTBF @ 40°C / U_R (U_{max}): > 200'000 h acc. to MIL-HB-217 F

*without resistors

Approvals obtained
or pending:



The TIMONTA high current filter family FMAC was developed for the following industrial applications:

- Frequency Converters
- Stepper Motor Drives
- UPS-Systems
- Inverters

Three versions of these filters are available. The first one, most important, includes filters for applications where high performances are required, with maximum rated voltage 480VAC. The second has been developed for standard use, also up to 480 VAC. The third (HV) is similar to the first one but has a maximum rated voltage of 520VAC. These filters can also be used in IT power systems in which the voltage between phases and earth can reach 520 VAC.

All these filters are ideally suited for applications with EN 55011, EN 55014 and EN 55022 requirements.

- All the versions include insulated safety screw terminals.
- Optionally VHV version (up to 760 VAC) are available on request
- Optionally, wire lead connections instead of the screw terminals are available (m.o.q. 50 pcs).
- Key features of the high current filter range include:
 - easy, space saving installation
 - high symmetrical and asymmetrical mode attenuation (from 10 kHz to 300 MHz)
- To maximize the filter performance in the application, the following EMC-rules should be considered:
 - physical separation of filter input and output lines
 - physical separation of the interference source itself
 - dedicated earth connection for the filter

Technical data of the high performance version - Rated voltage U_R (U_{max}) 480 VAC

Type	I_N (1) @ ϑ_a 40°C [A]	U_R (U_{max}) 50/60 Hz [V]	L_N (2) -30%/+50% [mH]	Resistance- L-L' ±15% [mΩ]	Power dissipation total ±15% [W]	Max. leakage current @ 440 V/50 Hz		C1 ±20% [μF]	C2 ±20% [μF]	C3 ±20% [nF]	C4 ±20% [nF]	C5 ±20% [μF]	C6 ±20% [μF]	R1 [MΩ]	R2 [MΩ]	Case	Terminal blocks [mm ²]
						In 3-phase systems (3) [mA]	Worst case (4) [mA]										
FMAC-0924-0610	3 x 6	480	3 x 10	23	2.48		40	1.0	-	100	10	2.2	-	-	1	24-3	4
FMAC-0931-0810	3 x 8	480	3 x 10	28	5.38		40	1.0	-	100	10	2.2	-	-	1	31-3	4
FMAC-0931-1610	3 x 16	480	3 x 6	11.5	8.83		40	1.0	-	100	10	2.2	-	-	1	31-3	4
FMAC-0932-1610	3 x 16	480	3 x 6	11.5	8.83		40	1.0	-	100	10	2.2	-	-	1	32-3	4
FMAC-0932-2510	3 x 25	480	3 x 3	4.4	8.25		156	4.4	1	10	47	4.4	1	1	1	32-7	6
FMAC-0934-3610	3 x 36	480	3 x 2	3.32	12.91		156	4.4	1	10	47	4.4	1	1	1	34-3	10
FMAC-0934-5010	3 x 50	480	3 x 1	1.3	9.75	≤ 5	160	4.4	1	10	100	4.4	1	1	1	34-3	10
FMAC-0953-6410	3 x 64	480	3 x 0.6	1.1	13.52		160	4.4	1	10	100	4.4	1	1	1	53-3	25
FMAC-0937-8010	3 x 80	480	3 x 1	1.17	22.60		167	6.6	1	47	100	6.6	1	1	1	37-3	25
FMAC-0954-H110	3 x 110	480	3 x 0.7	0.75	27.23		167	6.6	1	47	100	6.6	1	1	1	54-3	50
FMAC-0955-H210	3 x 180	480	3 x 0.4	0.37	36		167	6.6	1	47	100	6.6	1	1	1	55-3	95
FMAC-0956-H310	3 x 250	480	3 x 0.3	0.2	36		175	11	1	100	100	11	1	1	0.5	56-3	240
FMAC-0956-H410	3 x 340	480	3 x 0.2	0.13	45		176	11	1	100	100	22	1	1	0.25	56-3	240
FMAC-0957-H550	3 x 450	480	3 x 0.2	0.06	40		176	11	1	100	100	22	1	1	0.25	57	(A)
FMAC-0957-H650	3 x 550	480	3 x 0.2	0.046	45		176	11	1	100	100	22	1	1	0.25	57	(A)

(1) Current derating over 40°C : $I = I_N \times \sqrt{(100-\vartheta_a)/60}$

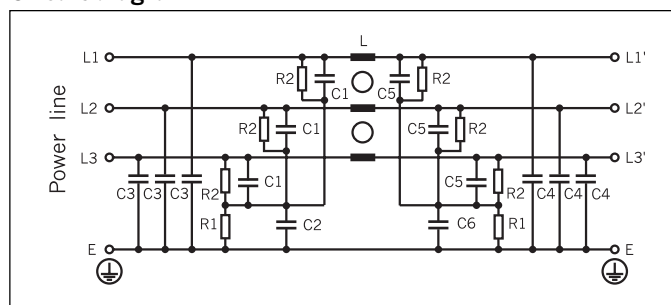
(2) Nominal inductance measured according to EN 138100, see introduction of this catalog, paragraph 3.4

(3) Measured according to IEC 60950 · 5.2.4 · 5.2.5, valid for TT and TN mains and with regular Sinus. See introduction of this catalog, paragraph 3.5

(4) Measured according to IEC 60950 · Annex G.4, valid for IT mains. See introduction of this catalog, paragraph 3.5

(A) Connection straps for M10

Circuit diagram



Insertion losses and case designs
see pages 78-79-80-81.

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