

# Three-phase de-coupling filter for power line communication

- 16 to 125A current ratings
- Ensures the immunity and reduces signal propagation
- Guarantees the coupling between the phases
- Avoids unwanted signal attenuation from the net or equipment
- Nennströme von 16 bis 125A
- Gewährleistet die Immunität und begrenzt die Signalausbreitung
- Garantiert die Kopplung zwischen den Phasen
- Vermeidet ungewollte Signaldämpfung durch Netz oder Geräte
- Courants de service de 16 à 125A
- Assure l'immunité et réduit la propagation de signaux
- Garantit le couplage entre phase
- Evite l'atténuation indésirable de signaux issus du net ou d'équipements



### Technical specifications

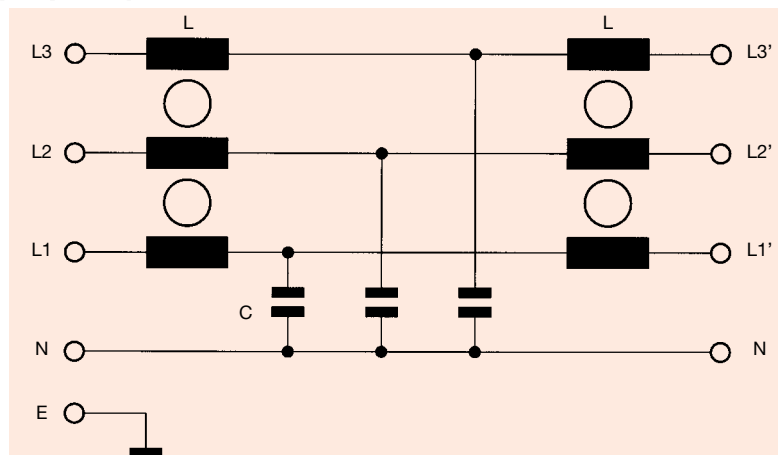
Maximum operating voltage:	3 x 480VAC @ 40°C
Operating frequency:	50 to 60Hz
High potential test voltage:	P/N → E 2000VAC for 2 sec (factory test) P → P 1100VDC for 2 sec (factory test)
Overload:	1.75 times rated current for 1 hour, once per day
Temperature range:	-25°C to +100°C
Flammability corresponding to:	UL94V2
Design corresponding to:	UL 1283, CSA 22.2 No. 8 1986, EN 133'200, EN 50065

### Approvals



Filter	Current rating @ 40°C (25°C) A	Leakage current 400VAC / 50Hz µA	Power loss @ I <sub>rated</sub> W	I/O connections	Weight kg
FN 6030 -16 -46	16 (17.9)	2	10.75	/46	1.45
FN 6030 -25 -47	25 (28.0)	2	14.25	/47	2.25
FN 6030 -63 -52	63 (70.5)	2	39.3	/52	7.2
FN 6030 -125 -35	125 (140)	2	93.75	/35	16

### Electrical schematic (simplified)

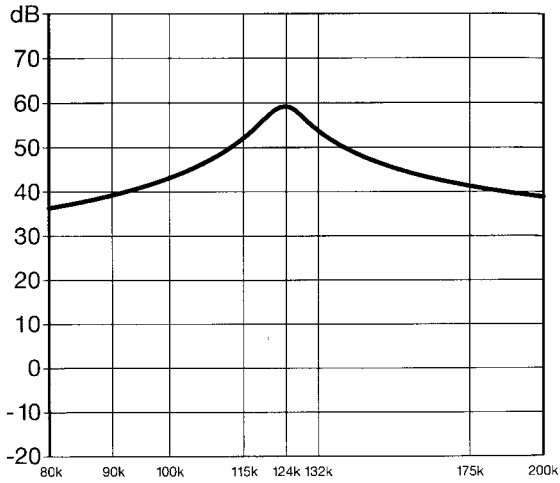


Note: This is a standard solution for low-frequency narrowband systems. De-coupling filters with different specifications to meet specific custom requirements are available on request.

## FN 6030 insertion loss

### Typical insertion loss characteristic

Per CISPR 17; 50Ω/50Ω symmetrical



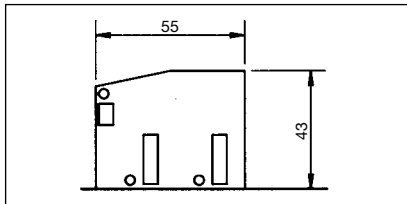
### Insertion loss table

Typical attenuation values

Filter	Measurement impedance	Attenuation @ 115kHz [dB]	Attenuation @ 132kHz [dB]
FN 6030-16-46	5Ω/5Ω	50	56
	50Ω/50Ω	51	54
FN 6030-25-47	5Ω/5Ω	48	50
	50Ω/50Ω	52	52
FN 6030-63-52	5Ω/5Ω	40	43
	50Ω/50Ω	51	52
FN 6030-125-35	5Ω/5Ω	38	48
	50Ω/50Ω	54	50

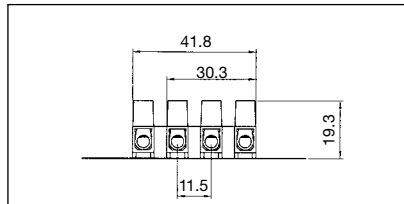
(Little deviations possible due to component tolerances)

### Filter input / output connections



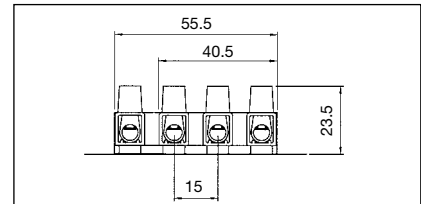
**Type /35**

Safety terminal block for solid and flex wire 50 mm<sup>2</sup> or AWG 1/0.  
Max. Torque: 8 Nm



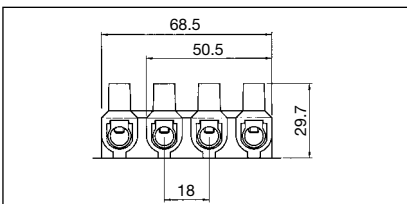
**Type /46**

Strip terminal block for solid wire 6 mm<sup>2</sup>,  
flex wire 4 mm<sup>2</sup> or AWG 12.  
Max. Torque: 0.8 Nm



**Type /47**

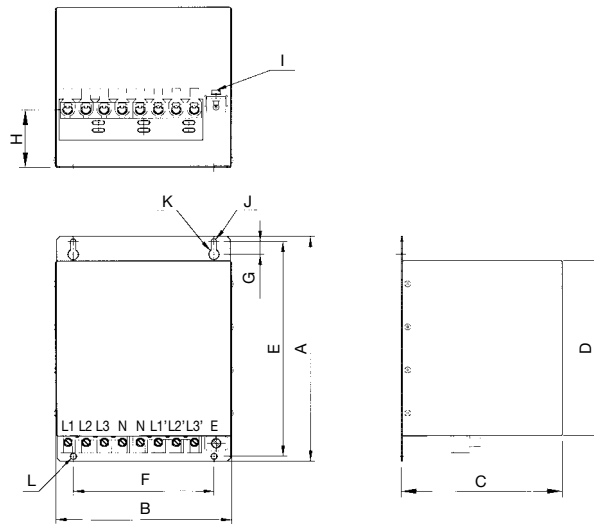
Strip terminal block for solid wire 16 mm<sup>2</sup>,  
flex wire 10 mm<sup>2</sup> or AWG 8.  
Max. Torque: 2.2 Nm



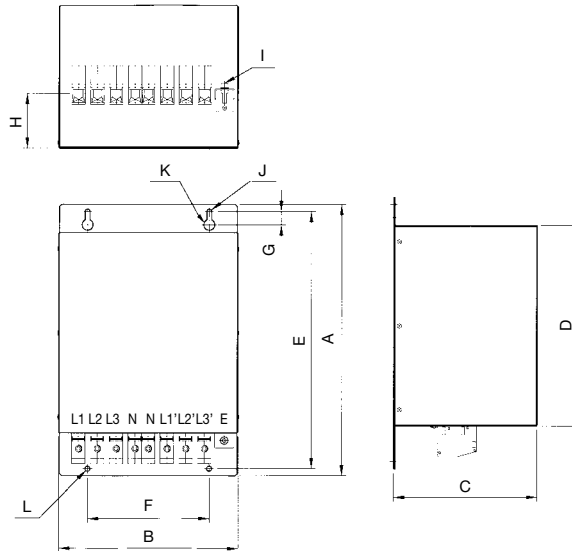
**Type /52**

Strip terminal block for solid wire 25 mm<sup>2</sup>,  
flex wire 16 mm<sup>2</sup> or AWG 4.  
Max. Torque: 2.2 Nm

**16A, 25A and 63A filters**



**125A filters**



**Dimensions**

	<b>16A</b>	<b>25A</b>	<b>63A</b>	<b>125A</b>
<b>A</b>	145	180	225	380
<b>B</b>	115	140	175	250
<b>C</b>	75	80	160	200
<b>D</b>	95	130	175	280
<b>E</b>	135	170	215	360
<b>F</b>	80	100	140	170
<b>G</b>		13		18.5
<b>H</b>	34.7	34.1	58	77
<b>I</b>		M5		M6
<b>J</b>		Ø5.3		Ø6.5
<b>K</b>		Ø10.3		Ø15.3
<b>L</b>		Ø6		Ø7

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO2768-m / EN22768-m

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