High performance power line filters 8020

The Compact high-performance power line filters are capable of providing a radiated transmission loss of 100 dB at 14 kHz up to 40 GHz. The leakage current is in milliampere level and the voltage drop is less than 1 V.

The filter is made to withstand the harshest environment and is very economical. Because of the custom design for your own filter, the assembly is very simple and always with very low leakage. This filter is also a stock item and therefore always available quickly.

This series is offered as a two-line filter (single-phase and neutral) or as a four-line filter (three phases and neutral). The single-phase filter can withstand up to 250 Volt, 1-1000 amp. If you are looking for a filter that can withstand more power we have the three-phase filter, this filter delivers up to 440 Volt, 1-1600 amp. The neutral line is always attenuated and all conductors are decoupled from each other. This allows the conductors to operate independently without attenuation loss.

The circuit is designed as a symmetrical double-circuit with high-quality rod cores providing inductance. These cores do not saturate due to their large air gap and they are insensitive to asymmetrical load.

Foil capacitors ensure a long operating life by their self-healing features even after voltage transients. A seamless fixing of the filter casing to the shielded room is very important to ensure the correct operation. The filter is housed in a casing that has a base flange which provides stable mounting and excellent earthing when bolted to the shielded room via the mounting bolts.

Please note: EMP protection is available on request.

Also, check our Ultra high-performance filters

Advantages

- Applicable in very low frequency (VLF) applications
- Can be delivered EMP-proof
- Suitable for use under extreme conditions (military applications)
- Wear-resistant
- Insensitive to corrosion
- Shielding performance: 100 dB @ 14 kHz-40 GHz (MIL-STD-285)

Applications

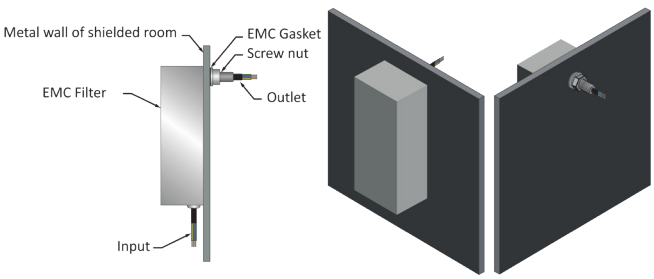
- Shielded rooms
- Shielded chambers
- Anechoic chambers
- Military applications
- Medical applications

Mounting

These protections are designed for mounting on the penetration panel or directly on the non-painted wall of the Faraday cage. Mounting terminals are dependent on the amount of power. Please see Connection in the Product range table.

Installation diagram

The technical drawing below shows how a power line filter is mounted on the wall a your Faraday cage.



Please note:

all 8020 filters can NOT be protected by a standard 30mA residual circuit breaker (RCCB). However, a RCCB protection device can be placed down line / load side of filter.

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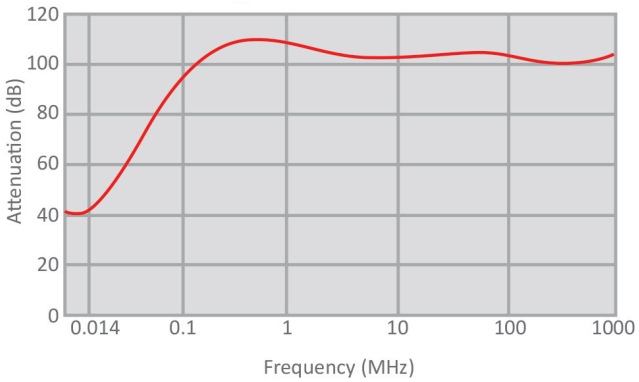
» *High performance power line filters 8020*

Technical Data

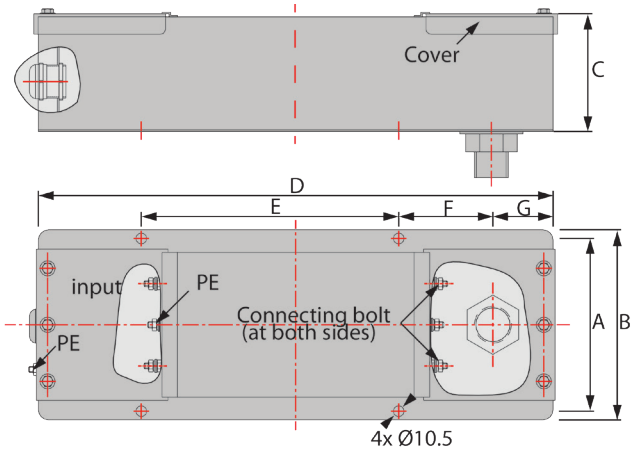
Rated voltage VR for two-line filters	250VAC/500VDC	Line-line or line-case
Rated voltage VR for four-line filters	440 VAC	Line-line
	250 VAC	Line-case
Rated Frequency fR	DC-60 Hz	
Rated Current IR	See characteristics	Referred to +40 °C ambient temperature
Number of lines	2/4	
Test voltage	1200Vdc/2s	Line-line or line-case
Voltage drop/phase ΔV	<1%	of VR at 50 Hz and IR
Leakage current I Leakage	See characteristics	at 380V/220V and 50Hz
Reactive current I Reactive	See characteristics	at 380V/220V and 50Hz
Discharge Time to Below 34 V	30 s	
Climatic category	25/070/21	
Shielding performance	100 dB @	14 kHz ~ 40 GHz

Insertion loss

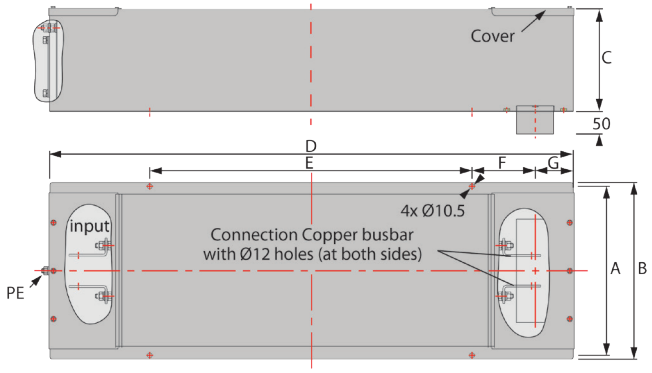


Available dimensions

Single phase and neutral filter types:
250VAC/500VDC, 1-1000 amp



Outline drawing 1



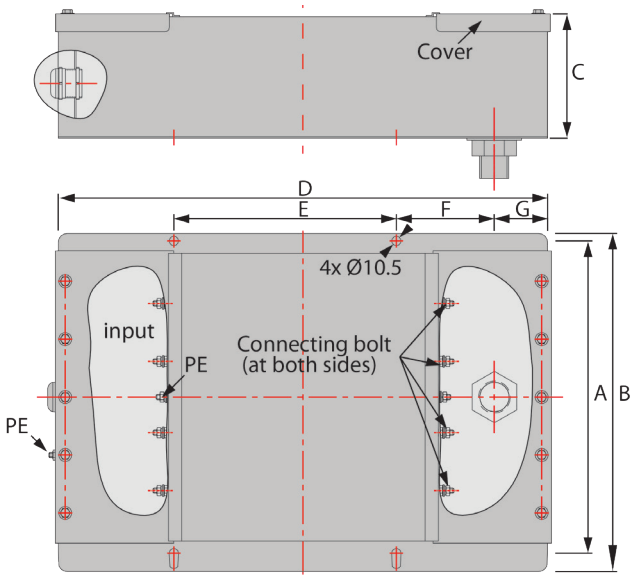
Outline drawing 2

Part number	A	B	C	D	E	F	G	Installation instructions	Outline drawing	IR (A)	I Leakage (A)*	I Reactive (A)	Terminal connection In	Terminal connection In	Shielding effectiveness
8020-2-16	188	205	120	750	450	110	80	M24 conduit screw	1	2×16	0.10	1.7	M6 Screw	M6 Screw	100 dB, 14 kHz ~ 40 GHz
8020-2-32	188	205	120	750	450	110	80	M24 conduit screw	1	2×32	0.10	1.7	M6 Screw	M6 Screw	
8020-2-63	188	205	140	920	620	110	80	M33 conduit screw	1	2×63	0.10	1.7	M6 Screw	M6 Screw	
8020-2-100	228	245	155	960	450	205	80	M60 conduit screw	1	2×100	0.15	7.0	M12 Screw	M12 Screw	
8020-2-200	228	245	155	960	450	205	80	M60 conduit screw	1	2×200	0.15	7.0	M12 Screw	M12 Screw	
8020-2-250	228	245	155	960	450	205	80	M60 conduit screw	1	2×250	0.15	7.0	M12 Screw	M12 Screw	
8020-2-400	336	356	205	1330	850	140	120	Flange	2	2×400	0.30	7.0	Bus bar	Bus bar	
8020-2-630	370	390	225	1300	800	170	105	Flange	2	2×630	0.45	7.0	Bus bar	Bus bar	
8020-2-800	485	505	255	1450	900	185	115	Flange	2	2×800	0.58	7.0	Bus bar	Bus bar	
8020-2-1000	510	530	255	1450	900	185	115	Flange	2	2×1000	0.58	7.0	Bus bar	Bus bar	

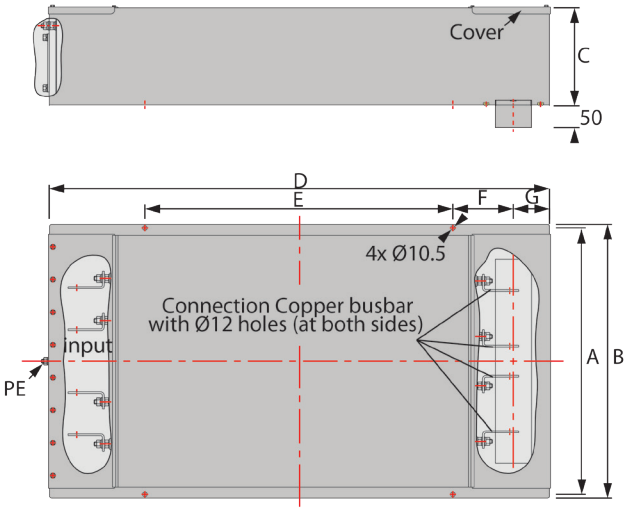
* If voltage between neutral and earth is 0V.

Available dimensions

Three phases and neutral filter types:
440 VAC/250 VAC, 1-1600 amp



Outline drawing 3



Outline drawing 4

Part number	A	B	C	D	E	F	G	Installation instructions	Outline drawing	IR (A)	I Leakage (A)*	I Reactive (A)	Terminal connection In	Terminal connection In	Transmission loss
8020-4-16	288	305	120	750	450	110	80	M33 conduit screw	3	4×16	0.10	1.7	M6 Screw	M6 screw	100 dB, 14 kHz 40 GHz
8020-4-32	288	305	120	750	450	110	80	M33 conduit screw	3	4×32	0.10	1.7	M6 Screw	M6 Screw	
8020-4-63	348	365	140	920	620	110	80	M33 conduit screw	3	4×63	0.10	1.7	M6 Screw	M6 Screw	
8020-4-100	348	365	155	960	450	205	80	M60 conduit screw	3	4×100	0.10	7.0	M12 Screw	M12 Screw	
8020-4-200	348	365	155	960	450	205	80	M60 conduit screw	3	4×200	0.10	7.0	M12 Screw	M12 Screw	
8020-4-250	388	405	155	960	450	205	80	M60 conduit screw	3	4×250	0.10	7.0	M12 Screw	M12 Screw	
8020-4-400	536	556	205	1360	850	170	120	Flange	4	4×400	0.10	7.0	Bus bar	Bus bar	
8020-4-630	670	690	225	1300	800	170	105	Flange	4	4×630	0.10	7.0	Bus bar	Bus bar	
8020-4-800	900	920	255	1450	900	185	115	Flange	4	4×800	0.12	7.0	Bus bar	Bus bar	
8020-4-1000	945	965	255	1470	900	205	115	Flange	4	4×1000	0.12	7.0	Bus bar	Bus bar	
8020-4-1200	910	930	275	1800	1200	278	112	Flange	4	4×1200	0.18	7.0	Bus bar	Bus bar	

* If voltage between neutral and earth is 0.